

Z809-02

***Sustainable Forest
Management: Requirements
and Guidance***

Update No. 1

Z809-02

May 2003

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Title: *Sustainable Forest Management: Requirements and Guidance* — originally published December 2002.

The following revisions have been formally approved. Changes to the Preface and Clause 0.8 are marked by the symbol delta (Δ) in the margin.

Revised	Outside front cover, inside front cover, title page, Preface, and Clause 0.8
New	None
Deleted	None

CSA Standard Z809-02 originally consisted of **58 pages** (vii preliminary and 51 text), each dated **December 2002**. It now consists of the following pages:

December 2002	iii–vi and 5–51
May 2003	Cover, title page, copyright page, and pages vii, 3, and 4

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

CAN/CSA-Z809-02
***Sustainable Forest
Management:
Requirements and
Guidance***

*A National Standard of Canada
(approved May 2003)*

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Individuals, companies, and associations across Canada indicate their support for CSA's standards development by volunteering their time and skills to CSA Committee work and supporting the Association's objectives through sustaining memberships. The more than 7000 committee volunteers and the 2000 sustaining memberships together form CSA's total membership from which its Directors are chosen. Sustaining memberships represent a major source of income for CSA's standards development activities.

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Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users to judge its suitability for their particular purpose.

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National Standard of Canada
(approved May 2003)

CAN/CSA-Z809-02
***Sustainable Forest Management:
Requirements and Guidance***

Prepared by



**CANADIAN STANDARDS
ASSOCIATION**

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Approved by
Standards Council of Canada



Published in December 2002 by Canadian Standards Association
A not-for-profit private sector organization
5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6
1-800-463-6727 • 416-747-4044

Visit our Online Store at www.csa.ca

ISBN 1-55397-087-X

Technical Editor: Katie Altoft

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(Copyright page replaced May 2003)

△ Preface

This is the second edition of CAN/CSA-Z809, *Sustainable Forest Management: Requirements and Guidance*. It supersedes the first editions of both CAN/CSA-Z808, *A Sustainable Forest Management System: Guidance Document*, and CAN/CSA-Z809, *A Sustainable Forest Management System: Specifications Document*, published in 1996. This Standard outlines the requirements for a forest manager or owner wishing to implement the public participation, system, and performance requirements for a defined forest area (DFA). It also outlines the auditing process used to determine whether the SFM (sustainable forest management) requirements are implemented at the DFA level.

This Standard describes the requirements for SFM of a DFA, including the nature of the commitment, the requirements for public participation, the performance requirements, the management framework, the review of actions, and continual improvement. While this Standard provides guidance to users regarding the certification, requirements for certification and the decision as to their acceptability rest with the registration bodies.

This Standard was prepared by the Technical Committee on Sustainable Forest Management, under the jurisdiction of the Strategic Steering Committee on Environmental Technology, and has been formally approved by the Technical Committee. This Standard has been approved as a National Standard of Canada by the Standards Council of Canada.

December 2002

Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
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0.7 Continual Improvement

The concept of continual improvement in SFM is central to this Standard. This Standard uses adaptive management procedures that recognize SFM as a dynamic process that must incorporate new knowledge acquired through time, experience, and research, and that must also evolve with society's changing environmental, social, and economic values. The Standard requires the organization to undertake an annual review of all its requirements, including performance requirements, to identify areas for continual improvement.

Continual improvement is a necessary aspect not only of forest management but also of the evolution of this Standard. That is why CSA requires that its SFM Technical Committee review this Standard periodically to ensure that it incorporates knowledge gained through implementation. A review of this Standard must occur within five years of publication. The first edition of this Standard was published in 1996, and the CSA Technical Committee started its review in 2000. The revised and improved Standard, published in December 2002, will be subject to the same process of review.

Like the first edition, this edition of Z809-02 was developed in an open, inclusive forum. This document reflects the ideas, positions, and concerns of a wide array of individuals and groups from across Canada with an interest in SFM, including the forest industry, woodlot owners, governments, academics, scientists, technical experts, Aboriginal peoples, unions, consumer groups, and conservation, environmental, and social organizations.

Δ 0.8 Third-Party Independent Audits

To become certified to this Standard, the organization must go through a third-party independent audit to the SFM requirements in this Standard (these requirements are set as boxed text). The audit is conducted by a registrar (certifier) accredited by the Standards Council of Canada. The individual auditors employed or contracted by the registrar have the requisite forestry expertise and are certified as environmental auditors. Audits to this Standard are done by accredited certifiers and certified auditors who are independent of the standards-writing body (CSA). In addition to the initial audit, there are mandatory annual reviews, which include both a document review and on-site checks of the forest to ensure progress is being made towards the achievement of targets and that the SFM requirements are being upheld. In addition, a full re-certification audit is required periodically following the initial certification, in accordance with the requirements of the Standards Council of Canada.

1. Scope

This Standard can be applied to any defined forest area (DFA). The boxed text prescribes the specific SFM requirements for public participation, performance, and systems. The text located outside the boxes is intended to clarify the specifications set out in the boxes by providing in-depth explanations and practical examples. It does not establish any requirements in addition to those specified in the boxes. An organization seeking third-party independent certification will be audited to the text in the boxes.

2. Reference Publications

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Guidelines for Sustainable Forest Management Systems — General Audit Principles and Audit Procedures for Auditing Sustainable Forest Management Systems

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Z764-96 (R2001)

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Criteria and Indicators of Sustainable Forest Management in Canada, Technical Report, 1997

Environment Canada

Canadian Biodiversity Strategy, 1995

Government of Canada

Constitution Act, 1982

The State of Canada's Forests 2001/2002, Canadian Forest Service, Natural Resources Canada

IAF (International Accreditation Forum)

IAF Guidance on the Application of ISO/IEC Guide 66 (Issue 2, 4 Dec 2001)

NRTEE (National Round Table on the Environment and the Economy)

Building Consensus for a Sustainable Future: Guiding Principles, 1993

SCC (Standards Council of Canada)

CAN-P-14B

Criteria and Procedures for Accreditation of Organizations Registering Environmental Management Systems

CAN-P-1518

Conditions and Procedures for Accreditation of Organizations Registering Environmental Management Systems

3. Definitions and Abbreviations

3.1 Definitions

The following definitions apply in this Standard:

Aboriginal — “‘aboriginal peoples of Canada’ [which] includes Indian, Inuit, and Métis peoples of Canada” (Constitution Act, 1982, Subsection 35 (2)).

Aboriginal rights — “rights that some Aboriginal peoples of Canada hold as a result of their ancestors’ long-standing use and occupancy of the land”.

Note: “The rights of certain Aboriginal peoples to hunt, trap, and fish on ancestral lands are examples of Aboriginal rights. Aboriginal rights vary from group to group depending on the customs, practices, and traditions that have formed part of their distinctive cultures”.

(*The State of Canada's Forests 2001/2002*).

CSA Standards Update Service

Z809-02

December 2002

Title: *Sustainable Forest Management: Requirements and Guidance*

Pagination: **58 pages** (vii preliminary and 51 text), each dated **December 2002**

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*Published in December 2002 by Canadian Standards Association
A not-for-profit private sector organization
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1-800-463-6727 • 416-747-4044*

Visit our Online Store at www.csa.ca

ISBN 1-55397-087-X

Technical Editor: Katie Altoft

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Preface

This is the second edition of Z809, *Sustainable Forest Management: Requirements and Guidance*. It supersedes the first editions of both CAN/CSA-Z808, *A Sustainable Forest Management System: Guidance Document*, and CAN/CSA-Z809, *A Sustainable Forest Management System: Specifications Document*, published in 1996. This Standard outlines the requirements for a forest manager or owner wishing to implement the public participation, system, and performance requirements for a defined forest area (DFA). It also outlines the auditing process used to determine whether the SFM (sustainable forest management) requirements are implemented at the DFA level.

This Standard describes the requirements for SFM of a DFA, including the nature of the commitment, the requirements for public participation, the performance requirements, the management framework, the review of actions, and continual improvement. It also lists the specific points that must be addressed, audited, and approved before certification can be recommended. This information is primarily for the use of certification applicants and auditors.

This Standard was prepared by the Technical Committee on Sustainable Forest Management, under the jurisdiction of the Strategic Steering Committee on Environmental Technology, and has been formally approved by the Technical Committee. This Standard will be submitted to the Standards Council of Canada for approval as a National Standard of Canada.

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Z809-02

Sustainable Forest Management: Requirements and Guidance

0. Introduction

0.1 General

Canada's forests make a significant contribution to our quality of life, the integrity of our environment, and the supply of paper and building materials and other forest products, both at home and abroad. Throughout the country, these forests are owned predominantly by the people of Canada, a diverse nation that has hundreds of forest-dependent communities with diverse forest types and circumstances. The future of our forests is important to all Canadians, including Aboriginal peoples who have a significant relationship with the land.

Across Canada, the provinces have rigorous legislation and policies for protection, conservation, and sustainable management of forests. This legislative framework is being continuously improved, as is forest management in Canada. In addition to using regulatory tools, organizations benefit from using voluntary tools, such as this Standard, to help them achieve sustainable forest management (SFM). This Standard gives organizations a system for continually improving their forest management performance and engaging interested parties in a focused public participation process. Certification to this Standard involves regular and rigorous independent, third-party certification audits.

0.2 High Degree of Public Involvement

CSA requires extensive public participation in development of its Standards. This Standard was first published in 1996, following years of discussion and work, using an open and inclusive process managed by CSA. One-quarter of the CSA SFM Technical Committee membership consisted of timber producers, including woodlot owners, while the remainder were scientists, academics, and representatives of the provincial and federal governments, as well as environmental, consumer, union, and Aboriginal representatives. In the fall of 1995, special consultations with non-governmental and environmental organizations were conducted to obtain input into the development of this Standard. In addition, a Canada-wide public review of this Standard generated considerable interest, with CSA distributing over 1500 copies of the draft Standard in response to requests for review. Public meetings were held in Montréal, Toronto, and Vancouver to seek further input. The first edition of this Standard was then revised and published in the fall of 1996.

In 2000, when CSA set out to review and improve upon the original Standard, it sought and incorporated public input once again. It also strengthened the conservation representation on its SFM Technical Committee, which now includes representatives from Wildlife Habitat Canada, the Canadian Wildlife Federation, and the Ontario Federation of Anglers and Hunters.

The need for public participation is also strongly emphasized in the Standard itself. In fact, this Standard requires organizations to seek comprehensive, continuing public participation and to work with Aboriginal peoples at the local community level. The public identifies forest values of specific importance to environmental, social, and economic concerns and needs. The public also takes part in the forest planning process and works with the organization to identify and select SFM objectives, indicators, and targets to ensure that these values are addressed. The public participation requirement of this Standard is one of the most rigorous of its kind in certification standards in the world today. Because Canadian forests are primarily publicly owned, it is vital that a Canadian forest certification standard involve the public extensively in the forest management planning process. Forest management that meets the SFM requirements of this Standard involves a positive relationship between the organization and the local community.

0.3 CCFM SFM Criteria and Elements as the Basis of the CSA SFM Performance Requirements

The most broadly accepted Canadian forest values generated to date are embodied in the Canadian Council of Forest Ministers (CCFM) SFM criteria and elements. The CCFM SFM criteria and elements are fully consistent with those of the Montréal and Helsinki processes, which are both recognized by governments around the world.

The requirements of this Standard are defined by the CCFM SFM criteria. In this Standard, use of the CCFM SFM criteria and elements as a framework for value identification provides vital links between local-level SFM and national- and provincial-scale forest policy, as well as a strong measure of consistency in identification of local forest values across Canada. In this Standard, the CCFM SFM criteria have been adopted verbatim. The elements, however, have been revised to provide meaningful application at the local level. Together, the CCFM SFM criteria and the adopted elements are referred to in this Standard as the CCFM SFM criteria and the CSA SFM elements.

In this Standard, the organization is required to work closely with the public to identify local values, objectives, indicators, and targets that reflect the national criteria and to incorporate them into forest management planning and practices. Decisions are made together with the public during this process.

0.4 A Performance Standard

This Standard is more than a system standard. It is also a performance standard. The Standard deals with performance at two levels. First, it prescribes use of a mandatory set of CCFM SFM criteria and CSA SFM elements. Second, it gives the public the opportunity to assist in setting specific values, objectives, indicators, and targets at the local forest level for each of the CSA SFM elements. The Standard requires a public participation process to set locally appropriate targets (including thresholds and limits). Moreover, this Standard sets specific requirements for the public participation process. This approach to performance not only respects government-recognized criteria for SFM but also allows the public to participate in the interpretation of the CCFM SFM criteria and CSA SFM elements for the local forest.

The concept of performance-based Standards is still evolving. There is not an internationally accepted or recognized definition of performance-based Standards for any application, including SFM. The strength of this Standard rests in its combination of public participation, performance requirements, and management system requirements.

0.5 Consistency with ISO 14001

This Standard is consistent with the internationally recognized ISO 14001 environmental management system Standard. It is essential to have a management system that can assure the fulfillment of all the CSA SFM requirements. A management system is the vehicle ensuring that both the public participation and performance requirements are fulfilled in a systematic and predictable manner that guarantees continual improvement in the forest. This Standard includes the SFM continuum of "Establishing a Policy → Planning → Implementation and Operation → Checking and Corrective Action → Management Review".

0.6 Forecasting and the Future of the Forest

Because of the slow growth and long lifespan of Canadian forest trees, as well as the need to ensure the continuance of values associated with forests, forecasting the effects of forest management operations and practices is fundamental to this Standard. This forecasting, which must be specified in the management plan, along with the functional bases for making the forecasts, is a key requirement and also involves public participation. Forecasting allows the organization to specify the SFM strategy and forest practices that will achieve the desired result in the context of adaptive management.

0.7 Continual Improvement

The concept of continual improvement in SFM is central to this Standard. This Standard uses adaptive management procedures that recognize SFM as a dynamic process that must incorporate new knowledge acquired through time, experience, and research, and that must also evolve with society's changing environmental, social, and economic values. The Standard requires the organization to undertake an annual review of all its requirements, including performance requirements, to identify areas for continual improvement.

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Canadian Biodiversity Strategy, 1995

Government of Canada

Constitution Act, 1982

The State of Canada's Forests 2001/2002, Canadian Forest Service, Natural Resources Canada

IAF (International Accreditation Forum)

IAF Guidance on the Application of ISO/IEC Guide 66 (Issue 2, 4 Dec 2001)

NRTEE (National Round Table on the Environment and the Economy)

Building Consensus for a Sustainable Future: Guiding Principles, 1993

SCC (Standards Council of Canada)

CAN-P-14B

Criteria and Procedures for Accreditation of Organizations Registering Environmental Management Systems

CAN-P-1518

Conditions and Procedures for Accreditation of Organizations Registering Environmental Management Systems

3. Definitions and Abbreviations

3.1 Definitions

The following definitions apply in this Standard:

Aboriginal — “‘aboriginal peoples of Canada’ [which] includes Indian, Inuit, and Métis peoples of Canada” (Constitution Act, 1982, Subsection 35 (2)).

Aboriginal rights — “rights that some Aboriginal peoples of Canada hold as a result of their ancestors’ long-standing use and occupancy of the land”.

Note: “The rights of certain Aboriginal peoples to hunt, trap, and fish on ancestral lands are examples of Aboriginal rights. Aboriginal rights vary from group to group depending on the customs, practices, and traditions that have formed part of their distinctive cultures”.

(*The State of Canada's Forests 2001/2002*).

Aboriginal title — “a legal term that recognizes the interest of Aboriginals in the land. It is based on their long-standing use and occupancy of the land as descendants of the original inhabitants of Canada” (*The State of Canada’s Forests 2001/2002*).

Accreditation — the procedure by which the Standards Council of Canada (SCC) gives formal recognition that a registrar (certifier) is deemed competent to carry out specific tasks.

Adaptive management — a learning approach to management that recognizes substantial uncertainties in managing forests and incorporates into decisions experience gained from the results of previous actions.

Auditor — a person qualified to undertake audits.

Note: For SFM registration audits, auditors are qualified according to the requirements set out in CAN-P-14B and CAN-P-1518.

Biodiversity (biological diversity) — “the variability among living organisms from all sources, including inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems” (Environment Canada, *Canadian Biodiversity Strategy*).

Certificate of registration (registration certificate) — the official document issued by a registrar to an organization upon successful completion of the registration process, including the registration audit.

Certification/registration — the result of a successful registration audit to this Standard, whereby the registrar issues a certificate of registration and adds the organization’s registration to a publicly available list maintained by the registrar. The certification process is described in Annex A.

Certifier (registrar) — an independent third party that is accredited by the Standards Council of Canada as being competent to register organizations with respect to nationally and internationally recognized standards.

Compliance — the conduct or results of activities in accordance with legal requirements.

Component — an individual section of the SFM system, e.g., policy, planning, implementation and operation, checking and corrective action, or management review.

Conformance — meeting non-legal requirements such as policies, work instructions, or standards (including this Standard).

Continual improvement — the ongoing process of enhancing SFM performance, resulting from experience and the incorporation of new knowledge in line with the organization’s SFM policy and from the application of the SFM requirements.

Corrective action — action to eliminate the cause of a detected nonconformity or other undesirable situation.

Note: There can be more than one cause for a nonconformity. Corrective action is taken to prevent recurrence, whereas preventive action is taken to prevent occurrence.

Defined forest area (DFA) — a specified area of forest, including land and water (regardless of ownership or tenure) to which the requirements of this Standard apply. The DFA may or may not consist of one or more contiguous blocks or parcels.

Deforestation — “clearing an area of forest for another long-term use” (*The State of Canada’s Forests 2001/2002*).

DFA-related worker — any individual employed by the organization to work for wages or a salary who does not have a significant or substantial share of the ownership in the employer’s organization and does not function as a manager of the organization.

Ecosystem — a dynamic complex of plants, animals, and micro-organisms and their non-living environment, interacting as a functioning unit.

Note: “The term ‘ecosystem’ can describe small-scale units, such as a drop of water, as well as large-scale units, such as the biosphere” (*Environment Canada, Canadian Biodiversity Strategy*).

Element — a concept used to define the scope of each CCFM SFM criteria. Each CCFM SFM criterion contains several elements. The CSA SFM elements were derived from the national-scale elements developed by the CCFM for more specific local applications. The elements serve to elaborate and specify the scope of their associated criterion (see Figure 1).

Environment — the surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and the interrelations of these elements.

Forecast — an explicit statement of the expected future condition of an indicator.

Forest — an ecosystem dominated by trees and other woody vegetation growing more or less closely together, its related flora and fauna, and the values attributed to it.

Forest condition — the state of the forest ecosystem as determined by a range of variables associated with forest structure, composition, and processes.

Forestland — land supporting forest growth or capable of doing so, or, if totally lacking forest growth, bearing evidence of former forest growth and now in disuse.

Independent (impartial) — free from bias.

Note: A registrar is not considered independent (impartial) if, in the two years preceding an audit, it or any of its personnel, subcontractors, or related bodies provide or have provided assistance or consulting services to the organization being audited and, as a result of the audit, certified (see definition of **Related body**).

Indicator — a variable that measures or describes the state or condition of a value (see Figure 5).

Interested party — an individual or organization interested in and affected by the activities of the management of a DFA.

ISO 14001 — an internationally recognized environmental management system standard published in 1996 by the International Organization for Standardization. The ISO 14001 Standard has been approved as a National Standard of Canada by the Standards Council of Canada.

Long term — in the context of making forecasts regarding forest structure and composition, at a minimum, twice the average life expectancy of the predominant trees in a DFA, up to a maximum of 300 years.

Objective — a broad statement describing a desired future state or condition of a value (see Figure 5).

Organization — a company, corporation, firm, enterprise, authority, or combination thereof, whether incorporated or not, public or private, that has its own functions and administration and that, for the purposes of this Standard, applies for certification.

Note: For organizations with more than one operating unit (for example, a division), a single operating unit may be defined as an organization.

Personnel — management, contractors, and DFA-related workers employed by the organization.

Preventive action — action to eliminate the cause of a potential nonconformity or other undesirable situation.

Note: *There can be more than one cause for a potential nonconformity. Preventive action is taken to prevent occurrence, whereas corrective action is taken to prevent recurrence.*

Private woodlot owner — an individual, or a group of individuals, who privately owns forestland. For the purposes of this Standard, private woodlots are those recognized as “woodlots” by the woodlot owner association in each province.

Productivity — the natural ability of a forest ecosystem to capture energy, support life forms, and produce goods and services.

Protected area — an area protected by legislation, regulation, or land-use policy to control the level of human occupancy or activities.

Note: *“Categories of protected areas include protected landscapes, national parks, multiple use management areas, and nature (wildlife) reserves” (The State of Canada’s Forests 2001/2002).*

Registrar/certifier — an independent third party that is accredited by the Standards Council of Canada as being competent to register organizations with respect to nationally and internationally recognized standards.

Registration applicant — an organization that has applied to an accredited registrar for certification to this Standard.

Registration audit — a systematic and documented verification process used to obtain and evaluate evidence objectively in order to determine whether the organization meets the SFM requirements set out in this Standard.

Registration/certification — the result of a successful certification process in conformance with this Standard, whereby the registrar issues a certificate of registration and adds the organization’s certification to a publicly available list maintained by the registrar (see Annex A).

Related body — a body linked to the registrar/certifier by common ownership or directors, contractual arrangement, a common name, informal understanding, or other means such that the related body has a vested interest in the outcome of an audit or has the potential ability to influence the outcome of an audit.

SFM performance — the assessable results of SFM as measured by the level of achievement of the targets set for a DFA.

SFM policy — a statement by the organization of intentions and principles in relation to SFM, which provides a framework for objectives, targets, practices, and actions.

SFM requirements — the public participation, performance, and system requirements found in Clauses 4, 5, 6, and 7.

SFM system — the structure, responsibilities, practices, procedures, processes, and time frames set by a registrar for implementing, maintaining, and improving SFM (see Figure 2).

Short-term operational plans — annual or five-year plans.

Standard — a document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines, or specifications for activities or their results, aimed at the achievement of the optimum degree of consistency in a given context.

Note: *Standards should be based on the consolidated findings of science, technology, and experience and should be aimed at the promotion of optimum community benefits.*

Strategy — a coordinated action set designed to meet established targets.

Sustainable forest management (SFM) — management “to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social, and cultural opportunities for the benefit of present and future generations” (*The State of Canada’s Forests 2001/2002*).

Target — a specific statement describing a desired future state or condition of an indicator. Targets should be clearly defined, time-limited, and quantified, if possible (see Figure 5).

Tenure — the terms under which a forest manager or owner possesses the rights, and assumes the responsibilities, to use, harvest, or manage one or more forest resources in a specified forest area for a specified period of time.

Note: *Private ownership of forestland is the strongest form of tenure, as the rights and obligations rest solely with the forest owner. Forest tenures of public land in Canada fall into two main categories: area-based and volume-based. Area-based tenures not only confer timber-harvest rights but also usually oblige the tenure holder to assume forest management responsibilities. Volume-based tenures normally give the holder the right to harvest specific volumes of timber in areas specified by the landowner or manager, but can also oblige holders to assume forest management responsibilities.*

Top management — persons with decision-making authority regarding SFM policy, resource allocation, and planning in the DFA.

Value — a DFA characteristic, component, or quality considered by an interested party to be important in relation to a CSA SFM element or other locally identified element (see Figure 5).

3.2 Abbreviations

The following abbreviations are used in this Standard:

CCFM — Canadian Council of Forest Ministers

CSA — Canadian Standards Association

DFA — Defined forest area

SCC — Standards Council of Canada

SFM — Sustainable forest management

4. Sustainable Forest Management Requirements

4.1 General Requirements

The organization shall meet the SFM requirements of this Standard, which include but are not limited to

- a) compliance with relevant legislation on the DFA;
- b) appropriate values, objectives, indicators, and targets that clearly address the CCFM SFM criteria and CSA SFM elements in this Standard;
- c) ongoing and meaningful public participation;
- d) progress towards or achievement of performance targets; and
- e) continual improvement in performance.

The CSA SFM requirements create a framework that facilitates effective and consistent on-site forest management while focusing on continual improvement. To be registered (certified), the organization needs to meet the specifications found in the boxed texts dealing with the SFM requirements, which include the public participation, performance, and system requirements set out in boxes in Clauses 4, 5, 6, and 7 of this Standard. The organization shall address all of the CSA SFM elements, as well as other values identified through the public participation process, by establishing objectives, indicators, and targets at the level of the specific DFA. The organization shall establish and maintain an SFM system, which includes the following components: policy, planning, implementation and operation, checking and corrective action, and management review to achieve continual improvement.

4.2 Required Activities

To meet all the SFM requirements of this Standard, the organization shall meet the

- a) **public participation requirements described in Clause 5;**
- b) **performance requirements described in Clause 6; and**
- c) **system requirements described in Clause 7.**

The SFM requirements are presented in three clauses (5, 6, and 7) to facilitate comprehension of the main tenets of this Standard. However, these three sets of requirements are interrelated and should be viewed together, rather than independently. For example, the performance requirements provide much of the content for the public participation process. Likewise, an important function of the system requirements is to provide the organization with the means to manage and track its SFM performance and continually improve upon it.

Note: All the requirements given in the text boxes of this Standard are gathered in Annex B.

4.3 Adaptive Management

The SFM system requirements are based on the principle of adaptive management, which enables and encourages the improvement of management actions and practices based on knowledge gained from experience. The organization should incorporate adaptive management concepts when implementing and maintaining the SFM system.

Forest ecosystems change continually as a result of both human and non-human influences. SFM requires the establishment of relationships between forest values and management actions. Adaptive management facilitates learning about these relationships at the temporal and spatial levels at which forest systems are managed. SFM in accordance with this Standard must use adaptive management to achieve continual improvement. This is done by regularly measuring and assessing a set of locally selected indicators and by modifying forecasts, activities, and plans based on this information (see Figure 1).

4.4 Continual Improvement

Continual improvement (see Figure 2) and overall progress towards SFM are achieved when all the SFM requirements are aligned and working together. Each of the SFM requirements makes specific demands and each is dependent on the others to be effective.

SFM policy and management review are illustrated in Figure 2 as separate components because they are the fundamental generators of continual improvement. The SFM policy sets the foundation for SFM for the organization and acts as a guide. Management review provides an opportunity for the organization to examine its performance against all of the SFM requirements both individually and collectively. The review, which takes place at least annually, maintains the continual improvement cycle through specific guidance, direction, and the allocation of necessary resources.

PLANNING (See Clause 7.3.6)	
DEFINE DFA	Define the forest area and its present conditions.
VALUES/OBJECTIVES	Identify and select values, objectives, indicators, and provisional targets.
INVENTORY	Prepare maps and other records associated with the chosen indicators.
FORECAST	Forecast expected future conditions of chosen indicators a) under a no-action strategy; and b) under alternative strategies.
CHOOSE	Select the strategy, with its associated indicator forecasts, that best meets desired targets.
IMPLEMENTATION AND OPERATION	
Take action as prescribed in the selected strategy.	
CHECKING AND CORRECTIVE ACTION (See Clause 7.5)	
Measure all indicators. Compare implemented actions to planned actions, and actual indicator levels to targets. Understand the reasons for differences between actual and planned outcomes, and use that understanding to improve management through corrective action.	
MANAGEMENT REVIEW (See Clause 7.6)	
Periodically review overall progress in achieving SFM and implementing the SFM requirements. Return to planning for the next cycle.	

Note: Refer to Clause 7.3.6 for further details.

Figure 1
The Process of Adaptive Management, Applied to Forests
(See Clauses 3.1 and 4.3.)

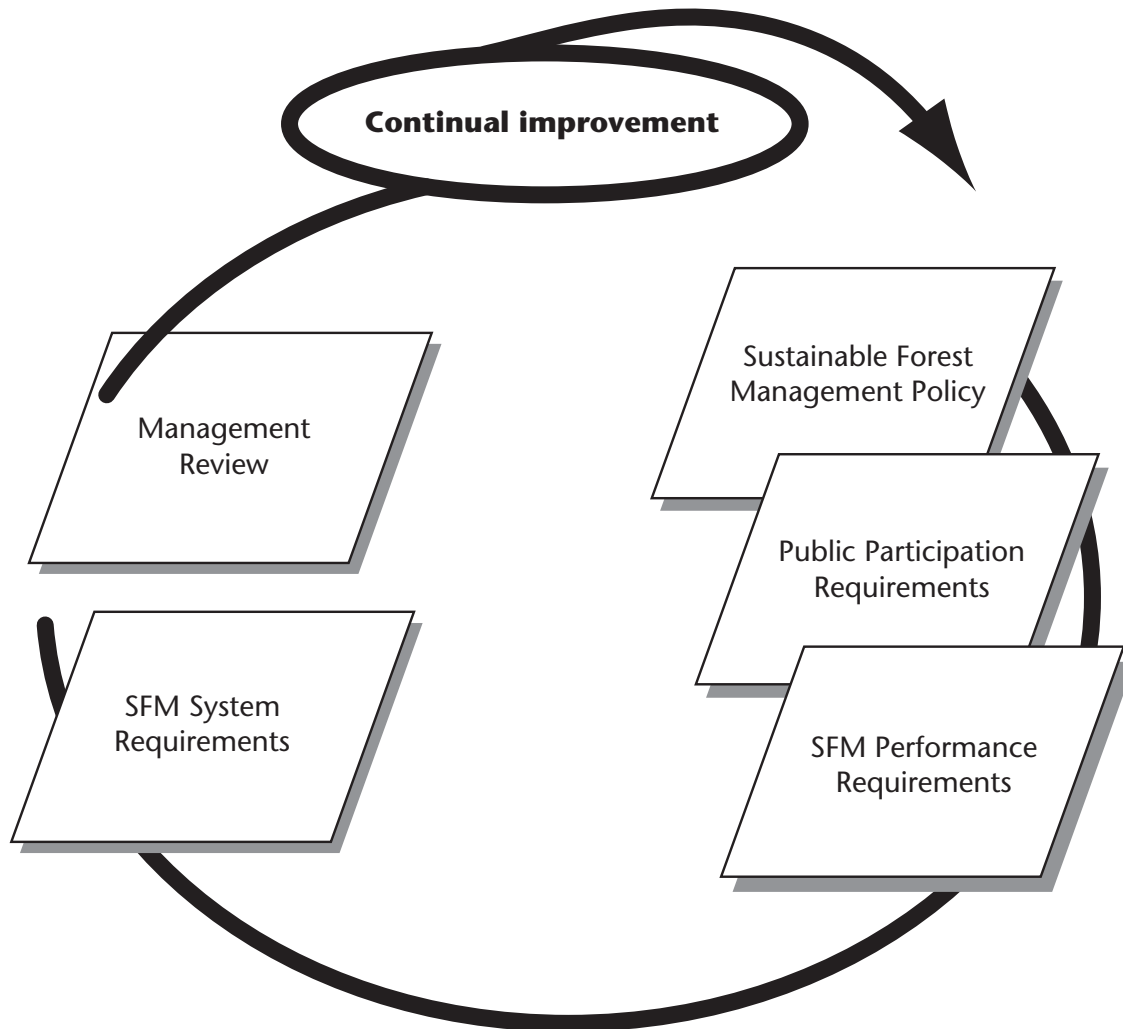


Figure 2
SFM Continual Improvement Model
 (See Clauses 3.1 and 4.4.)

5. Public Participation Requirements

5.1 Basic Requirements

The organization shall establish and implement a public participation process by either

- a) starting a new process;
- b) building on an existing process; or
- c) reviving a previous process.

Public participation is a vital component of SFM in Canada. Members of the public are widely considered to have the right to be involved in the management of publicly owned forests. Private forestland owners may also voluntarily adopt processes with extensive public input. Through their participation in the process, citizens can expect to enhance their knowledge of SFM in general and of other interests and values related to local forests. They also gain a valuable opportunity to be involved in the decision-making for the local forests.

Implementation of a public participation process as specified in this Standard gives the public an opportunity to be involved proactively in the management of a DFA. Interested parties are invited to have input in the major steps of SFM, and the organization has an obligation to heed such input, either by accepting it and revising management accordingly or by responding with specific reasons for not accepting it.

Public participation processes, however, have their limits. In a DFA-specific process, participants should not expect to be able to change existing public policies, laws, and regulations established by governments, nor to promote a concept that is illegal. A public participation process for SFM under this Standard will respect existing authority for decisions associated with the use and management of the DFA.

Effective public participation processes accommodate the public's wide range of knowledge, different interests, and varying levels of involvement with regard to SFM, as well as its differing cultural and economic ties with the forest. The approach to public participation may vary according to the DFA, the desired outputs, and the specific needs and rights of interested parties. A variety of strategies for public participation may have to be employed on a single DFA in the development and implementation of the SFM requirements. For example, one strategy is to involve a local group of interested and affected parties on an ongoing basis. This strategy could be complemented by communication with a broader public to increase awareness and understanding of SFM and to provide a mechanism for soliciting a wide range of input into the development and implementation of the SFM requirements.

The organization will doubtless be implementing the SFM requirements in an environment where other decision-making processes already exist. The organization will need to take previous planning into account and build upon existing management systems, public processes, and decisions relevant to the DFA, even though they may be applicable to a land base larger than the DFA. The organization may thus have an opportunity to use existing public participation processes when implementing the SFM requirements. Where the outputs of such public participation processes become regulatory or policy requirements of the jurisdiction in which the DFA is situated, these requirements should be reflected in the SFM system.

The organization can build on the results of existing or former public participation processes, but may need to refine and/or expand them to apply specifically to the DFA and to meet the public participation requirements set out in this Standard. Where existing processes do not address all the CSA public participation requirements, the organization should ensure that the gaps are filled through complementary measures. Additional information can be found in CSA Z764.

5.2 Interested Parties

The organization shall

- a) **openly seek representation from a broad range of interested parties, including DFA-related workers, and invite them to participate in developing the public participation process;**
- b) **provide interested parties with relevant background information;**

To seek representation of those directly affected by or interested in forest management in the DFA, the organization will need to have an understanding of the relevant interests and positions of local interested parties. In addition, it is important that the organization consider the broader public interest, particularly where decisions are likely to be seen as regionally significant or contentious. The organization should openly seek representation from DFA-related workers and/or their union representatives.

Interested parties can be engaged in public participation processes in several ways. Specific groups or individuals can be selected and personally invited to participate. Alternatively, they may be invited to nominate a representative. Where it is practically advisable to restrict the number of participants, clear criteria for selection should be established and a mechanism developed to provide those interested parties not selected with the opportunity to have input in the process.

- c) **demonstrate through documentation that efforts were made to contact Aboriginal forest users and communities affected by or interested in forest management in the DFA;**

- d) demonstrate through documentation that efforts were made to encourage Aboriginal forest users and communities to become involved in identifying and addressing SFM values;**
- e) recognize Aboriginal and treaty rights and agree that Aboriginal participation in the public participation process will not prejudice those rights;**

This Standard recognizes that Canadian forests have special significance to Aboriginal peoples. It further recognizes that the legal status of Aboriginal peoples is unique and that they possess special knowledge and insights concerning SFM derived from their traditional practices and experience. Aboriginal forest users and communities thus require unique consideration in the public participation process. (See also Clause 7.3.4.)

Aboriginal peoples who have an interest in or who are affected by forest management on a DFA should be given an opportunity to contribute their special knowledge to the process of setting values, objectives, indicators, and targets. In some cases, this opportunity may require a separate process of Aboriginal participation.

The efforts needed to contact and involve Aboriginal forest users are determined by the organization. There are several ways of proceeding. Some jurisdictions have specific regulations or policies on the ways of achieving Aboriginal participation. (See CSA SFM Elements 6.1 and 6.2.)

- f) establish and maintain a list of interested parties, including those that chose to participate, those that decided not to participate, and those that were unable to participate. The list shall contain names and contact information, as well as any links to the organization.**

In some jurisdictions, the public participation process may be part of the provincial forest management planning process because ensuring public participation is the province's legal responsibility. In this scenario, organizations may not have access to the government records of the public participation process, which would be required during an audit as evidence that all relevant elements of this Standard have been addressed. Therefore, it is important for the organization and the provincial government to reach an agreement before the public participation process as to how records of the public participation process will be maintained and accessed during audits.

It is important for the organization to document evidence of the invitations extended to participants, whether or not they chose to participate, and if they chose not to participate, the reason for their decision if it is available. It is also useful to conduct an annual review of the active participants and, as necessary, to invite new participants.

5.3 Process

5.3.1 Basic Operating Rules

The organization shall demonstrate that

- a) the public participation process works according to clearly defined operating rules that contain provisions on**
 - i) content;**
 - ii) goals;**
 - iii) timelines;**
 - iv) internal and external communication;**
 - v) resources (including human, physical, financial, information, and technological, as necessary and reasonable);**
 - vi) roles, responsibilities, and obligations of participants and their organizations;**
 - vii) conflict of interest;**
 - viii) decision-making methods;**
 - ix) authority for decisions;**
 - x) mechanisms to adjust the process as needed;**
 - xi) access to information (including this Standard);**
 - xii) the participation of experts, other interests, and government; and**
 - xiii) a dispute-resolution mechanism; and**
- b) the participants have agreed to the public participation process operating rules.**

The process of public participation for a specific DFA will be a function of the range of interested parties and their values and needs. Organizations should thus develop processes of public participation that are appropriate to local circumstances. To ensure that the public participants have some degree of ownership of the process in which they are being asked to participate, this Standard requires that there be agreement on the operating rules that guide the process. This will involve a determination of the relative importance of any of the required characteristics of a public participation process according to local circumstances. For example, if participants exercising their responsibility under this clause jointly determine that a dispute-resolution mechanism (Item a) xiii)) is unnecessary, and a rationale is provided, then such a process will not be included in the operating rules.

Public participation is not confined to a single event; it is an ongoing process. It must consistently provide input into the continual improvement of the organization's performance of the SFM requirements, and continue to do so during the monitoring and follow-up phases of implementation of the CSA SFM system.

Guidance on the operating rules is provided in Clauses 5.3.2 to 5.3.14.

5.3.2 Content

The operating rules need to specify the range of considerations and issues to be addressed in the process.

5.3.3 Goals

The aims or purposes for the public participation process need to be defined. The goals should address the expectations of the interested parties that have chosen to participate.

5.3.4 Timelines

The operating rules need to specify the expected duration of various stages of the process, including delivery dates for key outcomes. Timelines need to be sensitive to both efficiency (i.e., getting on with the implementation of this Standard without undue delay) as well as effectiveness (i.e., taking sufficient time for the SFM requirements to be met and for key tasks to be completed successfully).

5.3.5 Provisions for Internal and External Communication

The success of the public participation process is greatly influenced by the extent and quality of communications, both internal and external. Thought should be given to the ways in which the organization will communicate with other participants, participants will communicate and interact with each other, and participants will communicate with the broader public.

5.3.6 Resources

Effective public participation requires resources for effective and efficient implementation. The operating rules need to specify the resources that will be made available to the process, by which parties, and under what conditions. Human resources are needed to implement and service the process. Physical resources may include meeting places and transportation services. Finances are invariably needed to defray process costs and to underwrite the direct expenses of participants attending meetings. Relevant information, a key ingredient in any planning process, needs to be assembled and put in a format that is readily accessible to participants. Technological resources are mainly the analytical tools associated with planning and may include geographic information systems (GIS), remote sensing images, and various communications tools.

5.3.7 Roles, Responsibilities, and Obligations of Participants

The expectations on the part of both the participants and the organization should be clear at the outset and throughout the public participation process. Participant representation (do they represent themselves or an organization or affiliation?), attendance (are alternates permitted? how many meetings can a participant miss?), continuity, and similar matters are critical to credible, efficient, and valuable public participation.

5.3.8 Provisions for Conflict of Interest

The public participation process needs to have a system to deal with conflicts of interest, particularly when participants have relationships with the organization or any other party that must be declared.

5.3.9 Decision-Making Methods

For effective engagement, participants need to know how meetings will be conducted and decisions made. It is particularly important to establish whether meetings will use a specific method (e.g., consensus seeking), and if there is any voting, how it will be done.

5.3.10 Authority for Decisions

The operating rules should clarify which participants in the process have the authority to decide on specific matters. A public advisory group should be informed of the organization's regulatory responsibilities. This will help define the scope of the organization's authority and that of the public participation process.

5.3.11 A Mechanism to Adjust the Process

Changes to the public participation process are sometimes needed during implementation as participants become more involved. Such changes should be made according to protocols specified at the beginning of the process.

5.3.12 Access to Information

Information is critical to a sound public participation process. Participants, particularly the organization, need to bring forward relevant information. The conditions of confidentiality of certain information must be specified, if applicable. To understand SFM as described in this Standard, it is vital that the organization ensure that all participants be given an opportunity to read this Standard.

5.3.13 The Participation of Experts, Other Interests, and Government

The participants may at times find it useful to invite experts to discuss technical issues. Government representatives may become regular participants in the process, or they may take observer or technical-support roles. Non-local interests may have a desire to provide input, and the means of doing so must be agreed upon in advance. One approach is to design special ad hoc forums for dialogues between non-local interests and local interested parties.

5.3.14 Dispute-Resolution Mechanism

A common decision-making approach used in public participation processes for forest management in Canada today is that of consensus, which may or may not require unanimity. Given the sometimes heated debates that surround contemporary forest management, total agreement may be difficult to reach on some DFA-specific issues. The operating rules need to anticipate this circumstance and outline a means of dealing with conflict. Many guides are available to help participants understand participatory and/or consensus-seeking processes and develop means to resolve disputes. The guiding principles published by the National Round Table on the Environment and the Economy reproduced in Figure 3 are of particular relevance since they were developed in a Canadian context.

- Principle #1 — Purpose Driven.** People need a reason to participate in the process.
- Principle #2 — Inclusive Not Exclusive.** All parties with a significant interest in the issue should be involved in the consensus process.
- Principle #3 — Voluntary Participation.** The parties who are affected or interested participate voluntarily.
- Principle #4 — Self Design.** The parties design the consensus process.
- Principle #5 — Flexibility.** Flexibility should be designed into the process.
- Principle #6 — Equal Opportunity.** All parties must have equal access to relevant information and the opportunity to participate effectively throughout the process.
- Principle #7 — Respect for Diverse Interests.** Acceptance of the diverse values, interests, and knowledge of the parties involved in the consensus process is essential.
- Principle #8 — Accountability.** The parties are accountable both to their constituencies, and to the process that they have agreed to establish.
- Principle #9 — Time Limits.** Realistic deadlines are necessary throughout the process.
- Principle #10 — Implementation.** Commitment to implementation and effective monitoring are essential parts of any agreement.

Note: Source: NRTEE, Building Consensus for a Sustainable Future: Guiding Principles.

Figure 3
The Guiding Principles of Consensus Processes
 (See Clause 5.3.14.)

5.4 Content

- a) 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;

It is the organization's responsibility to provide interested parties with an opportunity to participate in all of the items listed in Item a). However, the level of involvement will be up to the participants. If the participants choose to focus on only some of the items that they consider to be significant, it remains the responsibility of the organization to address all of them and to report back to the participants on its decisions. The participants would then be in a position to provide input, should they so desire.

As the final set of values, objectives, indicators, and targets is specific to the DFA, the outputs from broader processes may need to be refined and gaps gradually closed. To facilitate this, the organization may compile information about its existing commitments to values, objectives, indicators, and targets as a "seed document" for its public participation process. However, it must be clear to participating interested parties that any such document is only a starting point and that it may be accepted, rejected, or improved upon through the public participation process.

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.

Resolution of issues identified should consist of any one or combination of the following:

- a) demonstrating that the issue raised is not applicable to the DFA;
- b) addressing the issue through the identification of one or more DFA-specific values and the associated objectives, indicators, and targets;
- c) identifying the issue as a topic that the public participation process needs to discuss on an ongoing basis;
- d) establishing and implementing performance-based thresholds and specifications to address the issue;
- e) addressing the issue through policy, operational controls, and/or best management practices;
- f) demonstrating that the issue is already resolved through satisfaction of a previously identified value; and
- g) other means, developed and accepted through the public participation process, that clearly and adequately address the issue.

b) The organization and the public participation process shall ensure that the values, objectives, indicators, and targets are consistent with relevant government legislation, regulations, and policies.

The principal role of public participation is the development of values, objectives, indicators, and targets for the DFA. This process must, at minimum, comply with existing government laws and regulations. It must also respect the findings of any formal public participation processes that have developed values, objectives, indicators, or targets relating to the CSA SFM elements at a landscape or regional level in the area in which the DFA is situated.

5.5 Communication

The organization shall

- a) **provide access to information about the DFA and the SFM requirements;**
- b) **provide information to a broader public about the progress being made in the implementation of this Standard;**

To meet the requirements in Items a) and b), the organization will need to provide information for interested parties to review and comment upon. Different interested parties may wish to have access to varying amounts and types of information. While access to all relevant information should be provided, the organization is not required to provide information to the public on purely internal proprietary and confidential matters. For example, if there is an issue that might affect the organization's competitive advantage or require the organization to disclose personal information about personnel, summaries of information could be provided.

Interested parties involved in the public participation process may represent broader constituencies and should relay information to those constituencies. However, the organization is required to provide information to a broader public about the progress being made in the implementation of the SFM requirements. The strategies for disseminating such information could include public announcements in the media, development of a web site, open houses, town meetings, smaller meetings with specific interest groups, or a variety of other forms of communication. Communication is a process of disseminating information as well as receiving input.

Opportunities should be provided for sharing information, views, and values. Suggestions received through the broader process of public communication should be considered by the organization and responded to in a timely fashion.

- c) **make allowances for different linguistic, cultural, geographic, or informational needs of interested parties;**
- d) **demonstrate that there is ongoing public communication about the DFA, including the public participation process; and**
- e) **demonstrate that all input is considered, and responses are provided.**

The requirements of this Standard include a rigorous process designed to provide interested parties with an opportunity to influence decisions and to provide input on important issues. However, this does not mean that the decision-making power resides with the public alone. The organization should take the public input seriously and demonstrate that it is responsive to and respectful of this input. In doing so, the organization should clearly explain how decisions, including any trade-offs, are reached. See also Clause 7.4.3.

6. SFM Performance Requirements: CCFM SFM Criteria and CSA SFM Elements

The organization, in conformance with the public participation process requirements set out in Clause 5, shall identify DFA-specific values, objectives, indicators, and targets for each of the CSA SFM elements described in Clause 6, as well as any other values associated with the DFA.

Successful implementation of SFM requires both a strong process and a comprehensive content. The content of SFM is determined by the values established for the DFA. (See the definition of “value” in Clause 3.)

In this Standard, adoption of the CCFM SFM criteria and CSA SFM elements as a framework for value identification provides vital links between local-level SFM and national and provincial forest policy, as well as a strong measure of consistency in identification of local forest values across Canada.

Each CSA SFM element is presented in both descriptive and prescriptive forms. The headings represent the descriptive form; they identify each CSA SFM element. The elaborating statement under each heading represents the prescriptive form; guidance is offered on how to deal with the element in the pursuit of SFM. See Clause 7.3.6 for guidance on developing values, objectives, indicators, and targets for a particular DFA.

CCFM Criterion 1 — Conservation of Biological Diversity

Conserve biological diversity by maintaining integrity, function, and diversity of living organisms and the complexes of which they are part.

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 DFA.

CSA SFM Element 1.2 Species Diversity

Conserve species diversity by ensuring that habitats for the native species found in the DFA are maintained through time.

CSA SFM Element 1.3 Genetic Diversity

Conserve genetic diversity by maintaining the variation of genes within species.

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 DFA and implement management strategies appropriate to their long-term maintenance.

Areas adjacent to the DFA may have an important role to play in protecting the ecosystem of the DFA. Hence protected areas need to be designed on a landscape basis, and not solely within the limits of the DFA. The organization should determine whether representative examples of the ecosystems present in the DFA are protected at the landscape level either in the DFA or in the adjacent area; if not, the organization should strive to have examples of such areas protected. A peer-reviewed gap analysis is a

useful tool to identify the existence and significance of protected areas when determining whether adequate representation of the range of sites has been achieved. When identifying local values and developing objectives, indicators, and targets for biodiversity, interested parties may want to consider relevant strategic or policy documents published by the government, in addition to the CCFM publications.

An inventory or map of sites of biological significance within the DFA should be made. The sites should include critical areas for wildlife habitat, sensitive sites, and unusual or rare forest conditions, as established according to scientific and traditional criteria.

CCFM Criterion 2 — Maintenance and Enhancement of Forest Ecosystem Condition and Productivity

Conserve forest ecosystem condition and productivity by maintaining the health, vitality, and rates of biological production.

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.

CCFM Criterion 3 — Conservation of Soil and Water Resources

Conserve soil and water resources by maintaining their quantity and quality in forest ecosystems.

CSA SFM Element 3.1 Soil Quality and Quantity

Conserve soil resources by maintaining soil quality and quantity.

CSA SFM Element 3.2 Water Quality and Quantity

Conserve water resources by maintaining water quality and quantity.

CCFM Criterion 4 — Forest Ecosystem Contributions to Global Ecological Cycles

Maintain forest conditions and management activities that contribute to the health of global ecological cycles.

CSA SFM Element 4.1 Carbon Uptake and Storage

Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems.

Forest carbon has recently become a key SFM value, especially in view of Canada's international commitment to lower its net carbon outputs to the atmosphere. Models for calculating a forest carbon budget may still be rudimentary, but even simple models can indicate whether a specific forest is expected to be a net carbon source or sink over the period normally used for wood-supply forecasts.

CSA SFM Element 4.2 Forest Land Conversion

Protect forestlands from deforestation or conversion to non-forests.

Forests may be turned into other types of ecosystems by a variety of activities, some of which relate directly to SFM (e.g., building roads and landings) and others outside the realm of forest managers (e.g., urban and industrial developments, utility corridors). Forest managers need to reduce the amount of

area converted to non-forest ecosystems as much as possible and to discourage unwarranted forestland conversions that are beyond their control.

CCFM Criterion 5 — Multiple Benefits to Society

Sustain flows of forest benefits for current and future generations by providing multiple goods and services.

CSA SFM Element 5.1 Timber and Non-Timber Benefits

Manage the forest sustainably to produce an acceptable and feasible mix of both timber and non-timber benefits.

CSA SFM Element 5.2 Communities and Sustainability

Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and to participate in their use and management.

CSA SFM Element 5.3 Fair Distribution of Benefits and Costs

Promote the fair distribution of timber and non-timber benefits and costs.

Forests represent not only a return on investment for the organization but also a source of income and non-financial benefits for DFA-related workers, contractors, and others; stability and opportunities for communities; and revenue for local, provincial, and federal governments. Through the public participation process and the implementation of SFM, the organization should address such matters as

- a) timber and non-timber benefits, including
 - i) outdoor activities, both in terms of quality and quantity;
 - ii) sustainable harvest of timber and non-timber resources;
 - iii) maintenance of economically viable hunting, fishing, and trapping activities;
 - iv) opportunities for ecotourism; and
 - v) protection and development of cultural and heritage resources;
- b) communities and sustainability, including
 - i) diversification of industry; and
 - ii) opportunities for employment; and
- c) fair distribution of benefits and costs, including
 - i) fair and reasonable wages for DFA-related workers, as established by prevailing industry collective agreements or market wage rates;
 - ii) fair return on investment to the organization and to DFA contractors;
 - iii) local taxation as determined by applicable assessment and appeal procedures;
 - iv) revenues to the Crown and other landlords as determined by applicable stumpage or market rates;
 - v) cost-sharing of activities;
 - vi) sharing of the economic, social, environmental, and health risks; and
 - vii) educational opportunities for DFA-related workers.

CCFM Criterion 6 — Accepting Society's Responsibility for Sustainable Development

Society's responsibility for sustainable forest management requires that fair, equitable, and effective forest management decisions are made.

CSA SFM Element 6.1 Aboriginal and Treaty Rights

Recognize and respect Aboriginal and treaty rights.

CSA SFM Element 6.2 Respect for Aboriginal Forest Values, Knowledge, and Uses

Respect traditional Aboriginal forest values and uses identified through the Aboriginal input process.

Aboriginal rights and Aboriginal title are recognized and affirmed in Section 35 of the Constitution Act, 1982. The SFM requirements do not in any way intend to define, interpret, or prejudice ongoing or future discussions and negotiations regarding these legal rights and do not stipulate how to deal with treaty rights. The appropriate bodies to make decisions related to Aboriginal and treaty rights are the governments.

Organizations are required to be in compliance with government regulations and policies and should be able to demonstrate that they are operating in accordance with the requirements applicable to their jurisdictions. Organizations are also required to make special efforts to secure Aboriginal participation. See also Clause 5.2, Items c), d), and e).

CSA SFM Element 6.3 Public Participation

Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants.

CSA SFM Element 6.4 Information for Decision-Making

Provide relevant information to interested parties to support their involvement in the public participation process, and increase knowledge of ecosystem processes and human interactions with forest ecosystems.

See Section 5 for more detail on the public participation process.

7. SFM System Requirements: The Continual Improvement Loop

7.1 General

The organization shall establish and maintain an SFM system, as described in Clause 7.

The SFM system requirements are intended to ensure that an infrastructure (including resources, processes, and controls) that enables an organization to deliver on the overall goal of SFM in the DFA is established and maintained. The system requirements are the delivery mechanism of SFM.

The organization is required to establish SFM values, objectives, indicators, and targets for all CSA SFM elements (see Clause 6) and then develop an SFM plan that describes the methods by which the targets are to be achieved in the DFA. The organization should put in place the resources, processes, and controls necessary to ensure successful implementation of the SFM plan. Measurement and assessment of the performance of the SFM requirements on a regular basis provides the information necessary to monitor progress. Through the processes of monitoring and measurement, as well as management review, the organization reports on its progress and demonstrates that corrective and preventive actions are taken in the event of any unplanned variances.

7.2 SFM Policy

The top management shall define and maintain the organization's SFM commitment through policy statements and/or other documented public statements.

The statement(s) shall contain a commitment to

- a) **achieve and maintain SFM;**
- b) **meet or exceed all relevant legislation, regulations, policies, and other requirements to which the organization subscribes;**
- c) **respect Aboriginal and treaty rights;**
- d) **provide for public participation;**
- e) **provide participation opportunities for Aboriginal peoples with respect to their rights and interests in SFM;**
- f) **provide conditions and safeguards for the health and safety of DFA-related workers and the public;**

- g) improve knowledge about the forest and SFM and to monitor advances in SFM science and technology and incorporate them where applicable; and**
h) demonstrate continual improvement in SFM.

The statement(s) shall be documented, communicated, and made readily available.

To ensure success, the ongoing commitment and leadership of top management are crucial. An early step in developing or improving an SFM system is to obtain a commitment to the SFM system from the top management of the organization that is responsible for managing the DFA. The responsibility for setting and approving the SFM policy normally rests with the organization's top management, while other levels of management may be responsible for implementing and suggesting modifications to it.

An SFM policy establishes an overall sense of direction for the sustainable management of the DFA and sets out the principles of action for an organization. It also establishes the level of responsibility and performance required of the organization, against which all subsequent actions will be judged. The SFM policy statement is the yardstick for the organization managing the DFA. Therefore, the policy should be documented, communicated both internally and externally, and made easily available to any interested party.

If the registration applicant comprises several organizations, there may be one policy statement for the DFA to which all organizations comprising the registration applicant subscribe, or each organization may have its own policy statement. While it is recognized that the vision, mission, and guiding principles of each organization may be different (and may not directly address SFM), their policies should not contradict each other in terms of a commitment to SFM.

The SFM policy statement should be reviewed periodically as part of the continual improvement process and modified, where appropriate, to reflect changing circumstances and the results of implementing the SFM requirements.

7.3 Planning

7.3.1 Defined Forest Area (DFA)

The organization shall designate a clearly defined forest area to which this Standard applies. The organization shall define the geographic extent and the respective ownership and management responsibilities for the DFA.

One of the first steps in meeting the SFM requirements is to establish the geographical boundaries of the defined forest area (DFA) to be managed under the SFM requirements. The DFA may be privately or publicly owned land, or a combination of both.

The SFM requirements need to be addressed for the entire DFA. This is a primary consideration in determining the extent of the DFA and the organizations or individuals necessary to meet the SFM requirements. There is no specified minimum or maximum size for a DFA: it may range from a few hectares to more than a million hectares; it may be a combination of smaller units or even a combination of non-contiguous operating areas. In the case of non-contiguous or overlapping areas it is required that all parties necessary to address the CSA SFM elements for the DFA be involved (see Clause 7.3.3). When fulfilling this requirement, the organization should attempt to maximize the participation of individual parties that make up the registration applicant. The organization should also demonstrate that the activities of other parties within the DFA do not undermine the achievement of the SFM objectives.

Changes to the geographic extent of the DFA may be made over time without affecting certification, provided that the impacts of the changes are insignificant. Changes to a DFA may result from a variety of circumstances. For example, under volume-based tenure, the operating areas of the organizations that make up the registration applicant may vary from year to year, and this could influence the geographic extent of the DFA. In these circumstances, historic operating areas of volume-based tenures can be included in the DFA. In a situation in which owners or managers of small, non-contiguous parcels of land, such as woodlots, come together to form a registration applicant, the addition of new woodlots to the DFA or the deletion of existing woodlots from the DFA may occur according to the interests of participants. Even in cases of area-based tenure, factors may arise that result in modifications to the boundaries of a DFA. In all cases, these changes must be documented. Slight changes to a DFA, with no

apparent impact on values, objectives, indicators, and targets, may not require changes to the methods of meeting the SFM requirements of the SFM plan.

7.3.2 Ownership Rights and Responsibilities

The organization shall respect the legal rights and responsibilities of other parties in the DFA that are not part of the registration applicant.

The organization may be subject to a range of rights and responsibilities related to its operations in the DFA, according to the pattern of land ownership and the types of activities that are carried out in the DFA. These rights and responsibilities will generally be set out in agreements between the landowner (e.g., the government in the case of public lands) and the organization. There may be other parties in the DFA that are not part of the registration applicant but whose legal rights and responsibilities must be respected by the organization. Such rights and responsibilities must be documented. They include all the existing legislative and policy responsibilities assumed and executed by various government agencies.

7.3.3 Shared Responsibilities

7.3.3.1 General

The organization shall ensure that all parties necessary to address the CSA SFM elements for the DFA are involved in the process. The organization shall clearly describe the respective roles and responsibilities of the parties involved.

Certification is specific to the DFA to which the SFM requirements are applied. Any combination of owners and managers can make up the registration applicant, and any combination of public land and private land can make up a DFA, provided that the SFM requirements of this Standard can be met.

Depending on the pattern of land ownership and the nature of the relationship between governments and licensees or users on public land, there will likely be shared responsibilities for managing forest values in a DFA. These responsibilities should be defined. Where responsibilities related to any of the CSA SFM elements are shared among various organizations or individuals, it may be necessary to consider these organizations for inclusion in the registration applicant. An open invitation to participate in meeting the SFM requirements should be provided to those with management responsibilities.

In some cases, the activities of individuals or organizations that are operating outside the boundaries of the DFA can have a significant impact on the ability of the organization to achieve SFM targets within the DFA. In these situations, those individuals or organizations may be invited to become part of the registration applicant. If they decline, the organization cannot be held responsible for their actions. However, it would be advisable to attempt to anticipate the impacts of their actions in the development of SFM targets. Attempts made to include outside organizations, as well as the reasons given for their participation or non-participation, should be documented.

7.3.3.2 The Role of Government

Many DFAs in Canada are situated on public land where governments are responsible for many of the forest values contained in the CSA SFM elements. However, government participation in meeting the SFM requirements cannot be made mandatory. This Standard is voluntary and non-regulatory, and meeting the SFM requirements need not depend on government involvement.

7.3.3.3 Volume-Based Tenure

As the SFM requirements are intended to achieve performance targets in a DFA, their implementation will require a significant level of co-operation among organizations operating on volume-based tenures. In such circumstances, individual organizations are unlikely to have sufficient responsibility and control to ensure that all CSA SFM elements are addressed in the DFA. Organizations that operate on a volume-based tenure will need to determine the extent of their responsibilities related to implementing the SFM requirements in the DFA and will need to identify the responsibilities of other organizations

operating in the same area. In this way, the organization can determine the partnerships it may need to establish to become a viable registration applicant. It is recognized that each organization within the registration applicant may have its own “corporate personality”, vision, mission, policy statements, and operating procedures. This is acceptable provided that each organization meets the requirements outlined herein. However, all organizations comprising the registration applicant must agree to the same SFM targets for the DFA and have the resources, processes, and controls in place to ensure that they are met.

Since the implementation of the SFM requirements is voluntary and non-regulatory, cases may arise in which individuals or organizations with management responsibilities are not interested in participating. Such a decision does not necessarily rule out successful certification to this Standard for the individuals or organizations that are interested in proceeding to meet the SFM requirements. In fact, it is not necessary for all individuals or organizations with management responsibility to be involved, provided that the operations of those not participating do not prevent the registration applicant from meeting its SFM targets in the DFA.

7.3.4 Rights and Regulations

The organization shall

a) demonstrate that relevant legislation and regulatory requirements that relate to ownership, tenures, and rights and responsibilities in the DFA have been identified and complied with;

To facilitate keeping track of legal requirements, an organization should establish and maintain a list of all legal requirements pertaining to the DFA. The organization should be able to demonstrate that it is aware of legal requirements and has a system to ensure legal compliance.

Specific legal requirements are related to various aspects of the organization’s forestry activity, including the following:

- a) the activity (e.g., road construction, resource management and environmental laws, authorizations, licences and permits);
- b) the organization’s products or services;
- c) monitoring, measurement, and reporting; and
- d) the industry.

Some issues that should be considered in legal and other requirements are the organization’s access to and identification of relevant legal and other requirements, its tracking of changes to legal and other requirements, and its communication of relevant information on legal and other requirements to personnel, contractors, and subcontractors.

Note: Several sources can be used to identify legal requirements and ongoing changes, including

- a) company legal departments;
- b) all levels of government;
- c) industry associations or groups;
- d) commercial databases; and
- e) professional services.

b) demonstrate that Aboriginal and treaty rights have been identified and respected;

See CSA SFM element 6.2.

c) demonstrate that the legal and constitutional rights, and the health and safety of DFA-related workers, are respected and their contributions to SFM are encouraged;

For DFA-related workers to be able to contribute to SFM, it is necessary that they have access to training and awareness programs.

d) demonstrate that the acquired and legal rights of private woodlot owners to set their own values, objectives, indicators, and targets relating to their properties are respected;

The values of private woodlot owner are to be addressed in the context of important public values. Private woodlot owners have acquired rights and responsibilities, which are recognized by this Standard. All CSA SFM requirements apply regardless of ownership. However, this Standard recognizes that private landowners have the right to decide the objectives for their land and limit public access for certain activities.

- e) establish and maintain procedures to identify and have access to all legal and other requirements to which the organization subscribes that are applicable to the DFA. This includes requirements that relate to ownership tenures, rights, and responsibilities in the DFA.

7.3.5 Incorporation of Public Participation Requirements

The public participation requirements set out in Clause 5 of this Standard shall be incorporated into the SFM system.

7.3.6 Setting DFA-Specific Performance Requirements

7.3.6.1 General

The organization, working with interested parties in the public participation process at each stage, shall establish DFA-specific performance requirements that address all the CSA SFM elements in Clause 6. The work shall be recorded in the SFM plan and shall be summarized in accordance with the example in Annex C.

For each element, one or more DFA-specific values shall be identified.

For each value, one or more objectives shall be set.

For each value, one or more indicators shall be identified. Indicators shall be quantitative where feasible.

For each indicator, data on the current status shall be provided, and one target shall be set. Each target shall specify acceptable levels of variance for the indicator and clear time frames for achievement.

Alternative strategies shall be identified and elaborated.

Forecasts shall be prepared for the expected responses of each indicator to each alternative strategy. Assumptions and analytical methods used for making each forecast shall be described.

During plan implementation, measurements shall be taken for each indicator at appropriate times and places. Measurement results shall be interpreted in the context of the forecasts in the SFM plan. See Clauses 7.5.1 and 7.6 for the continuation of the adaptive management process.

Because values represent what is important in and for a DFA, the organization needs a clear and transparent mechanism for identifying DFA-specific values and translating them into detailed targets that can be met with implementation of a chosen strategy. This Standard lays out an effective and efficient process for doing this through the public participation process (see Table 1).

Table 1
An Example of Integration of Public Participation Process
Content Requirements and DFA Performance Requirements

(See Clauses 7.3.6.1 and 7.3.6.5.)

Public participation process content (see Clause 5.4, Item a))	Setting DFA performance requirements (see Clause 7.3.6)	Explanations and examples
Identify and select values, objectives, indicators, and targets.	For each element, identify one or more DFA-specific values.	For example, when considering CSA SFM element 1.2, Species Diversity, a population of pileated woodpeckers could be a DFA-related value. There can be many such values for each element.
	For each value, set one or more objectives.	For the pileated woodpecker population, the objective could be to maintain their habitat at the present level. It is sensible to limit objectives to one per value; however, in some circumstances, more than one objective may be necessary.
	For each value, identify one or more indicators.	For the pileated woodpecker population, the indicator might be the habitat carrying capacity, measured by the number of breeding pairs per 100 km ² . Each value may have more than one indicator. For the pileated woodpecker population, another indicator could be productivity, measured by the number of young leaving the nest each year.
	For each indicator, provide data on current status and identify a target.	For the pileated woodpecker population, the current habitat carrying capacity might be 20 pairs per 100 km ² , and the target might be a minimum of 20 pairs per 100 km ² .
Develop alternative strategies to be assessed.	Design a small set of alternative strategies.	<p>Examples might include</p> <ul style="list-style-type: none"> a) no timber harvest and associated activities; b) continuation of current forest management; c) shift to highly intensive forest management; and d) strong move to emulation of natural disturbance patterns. <p>The strategies should be restricted in number (about 4 to 6) and clearly distinguished in the early stages of analysis. Each strategy includes all the major actions needed to manage the DFA (e.g., access, timber harvest, regeneration, protection, etc.)</p>
	Create a forecast for each chosen indicator in response to each strategy.	Forecasts for biophysical indicators need to be quantitative and long-term. Forecasts for socio-economic indicators may be quantitative or qualitative, as appropriate. Forecasts for qualitative indicators can be developed using scenario-building techniques. Provide the analytical basis for all forecasts.

(Continued)

Table 1 (Concluded)

Public participation process content (see Clause 5.4, Item a))	Setting DFA performance requirements (see Clause 7.3.6)	Explanations and examples
Assess alternative strategies and select the preferred one.		Use formal (e.g., trade-off analysis, multivariate statistical techniques) and/or informal (e.g., discussion) methods to weigh the relative merits of the assessed strategies. If no strategy emerges as broadly acceptable, then revise targets or develop new strategies, or both, and prepare new forecasts. Continue the process until an acceptable/preferred strategy emerges.
Review the SFM plan.		This step allows all parties to concur that the SFM plan properly reflects the decisions reached throughout the process so far.
Design monitoring programs, evaluate results, and determine opportunities for improvement.	Design field measurement programs and implement them.	Collect appropriate data to track the indicators and any other variables deemed important in checking the performance of forecasting models.
	Analyze results and include them in the public participation process for interpretation and discussion.	All parties need to examine monitoring data in the context of the forecasts and discuss how to improve all facets of the SFM plan for its next revision/recreation.

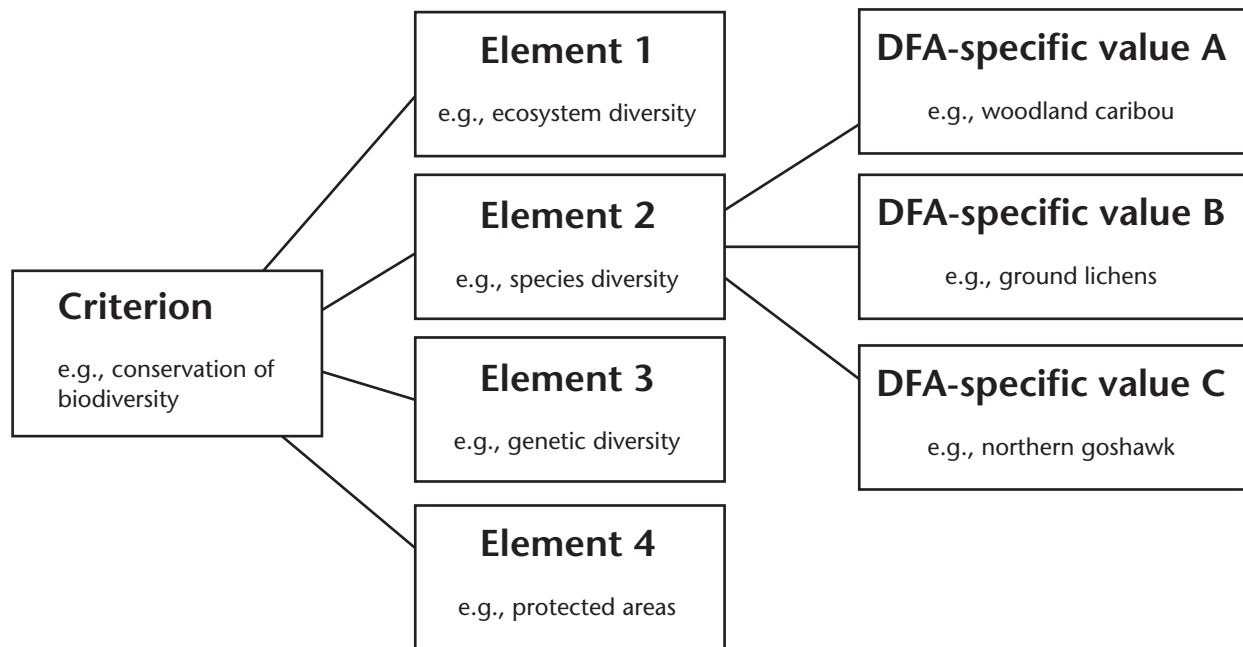
7.3.6.2 Identifying DFA-Specific Values

A values-identification exercise is needed to create a set of forest values that pertain specifically to the DFA. In the public participation process, interested parties may find it suitable to begin by identifying DFA-specific values and then organizing them under the CSA SFM elements. Alternatively, they may begin by considering the CSA SFM elements and then making sure to identify at least one DFA-specific value for each element. The CCFM SFM criteria and the CSA SFM elements given in Clause 6 serve as organizing concepts and ensure that DFA-specific values cover a comprehensive range of considerations in SFM (see Figure 4).

During the process, interested parties may identify some DFA-specific values that are not apparently associated with any of the CSA SFM elements. In such a case, the exercise may need to increase the number of elements to include the additional values.

7.3.6.3 Defining Objectives

Each value needs at least one objective that describes the desired future condition for the value. Interested parties may find it appropriate to develop more than one objective for each value. In such a case, the parties should strive to ensure compatibility among the objectives, aiming for mutually supporting objectives rather than conflicting ones.



Note: Objectives and indicators are identified for DFA-specific values in Figure 5.

Figure 4
Relationships among Criteria, Elements, and DFA-Specific Values
(See Clause 7.3.6.2.)

7.3.6.4 Choosing Indicators

Indicators are the means of measuring or describing the state or condition of forest values. Interested parties are guided in various ways regarding indicator selection. They are influenced by their own ideas about useful indicators, by the existence of mandatory indicators related to government regulations and policies that relate to the DFA, and by possible reference sets of indicators such as those of the CCFM and the Model Forest Network. The organization's own internal management policies and procedures may dictate the need for certain indicators, and the interested parties may find it useful to consult with technical experts. The final indicator set is a result of the input from a number of these sources.

Selecting indicators involves defining what is to be measured and why it is important. Indicators pertaining directly to forest conditions are preferred over those that pertain to SFM activities. Directly measuring a forest condition provides a closer view of the realization of most values than measuring an activity that influences the condition.

In some instances, direct measurements of forest conditions are not feasible, and an indirect measurement is necessary. If this occurs, the relationship between the selected indicator and the condition being measured should be clearly established and periodically checked to ensure that the stated relationship remains valid. For example, if the amount of a certain ecosystem type is used as a surrogate for the population of a rare species, it is necessary to establish periodically that the rare species is present in the ecosystem type.

In the indicator selection process, interested parties should apply a set of quality criteria when assessing whether proposed indicators should be retained for use. Such criteria should include the following:

- a) Measurability — targets can only be set for indicators that can be measured;
- b) Predictability — indicators whose future levels can be predicted with reasonable accuracy are needed;
- c) Relevance — indicators should be clearly applicable to their associated values;
- d) Understandability — indicators should be simple, clear, and easy to understand;

- e) Validity — indicators should be consistent with the scientific understanding of the value they measure and should be technically valid (objectively obtained, documented, comparable, and reproducible); and
- f) Feasibility — the process of monitoring indicators should be practical, cost-effective, and efficient.

7.3.6.5 Setting Targets

Each indicator requires a single target to define its desired future condition. A target may be a specified level for an indicator at a specified point in the future or a series of such levels for a corresponding series of points in the future. (See Table 1 for an example.)

Targets can be set in a variety of ways. Using the “bull’s-eye” concept, a target could call for the indicator to show a fixed quantity or a fixed range. Alternatively, the target could specify a minimum or maximum value for the indicator. Whatever the approach chosen, targets need to specify acceptable departures (e.g., the size, location, duration, and frequency of the deviation from the chosen limits that are acceptable).

There is a danger in trying to set firm targets at the beginning of the planning process. The danger is the possibility that no feasible strategy can be designed and implemented to meet all the targets. A better approach is to set tentative or provisional targets at the beginning of the planning process, and then iteratively develop and assess strategies and adjust targets until a match is obtained between an appropriate set of targets and an acceptable strategy (see Table 1).

A key concept necessary in determining appropriate SFM performance in relation to ecological elements (i.e., those associated with CCFM Criterion 1.4) is the range of natural variation. This concept demands that, for each chosen indicator, explicit attention be paid to a reference time frame, limits on the range, and behaviour of the indicator within the limits. Clearly, the demands on science are large when the range of natural variation needs to be considered when judging sustainability. As part of the public participation process, the organization and interested parties should examine carefully and discuss fully the role of the range of natural variation in the context of SFM in the DFA.

7.3.6.6 Designing and Evaluating Strategies

SFM strategies for most DFAs 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. In reality, participants in a DFA-specific planning process may refer to one set of strategies for meeting one target and another set of strategies for another target. Interested parties are free to contribute to strategy development using any approach or language that they find comfortable. It is advisable to keep the strategies to be assessed limited to a few (for tractability of assessment work) and easily distinguished (so that analytical results can show how the indicator responses to the assessed strategies actually differ).

The process of evaluating a strategy involves examining forecasts of each indicator’s response to the implementation of the strategy, and determining the degree to which provisional targets are met. Thus, during the planning process it is necessary to prepare forecasts for all the indicators of all the considered strategies. The organization, with input from the public, can decide whether or not to include all these forecasts in the SFM plan. Of course, the only forecasts that will be tested through the monitoring and evaluation process are those associated with the strategy chosen for implementation in the DFA.

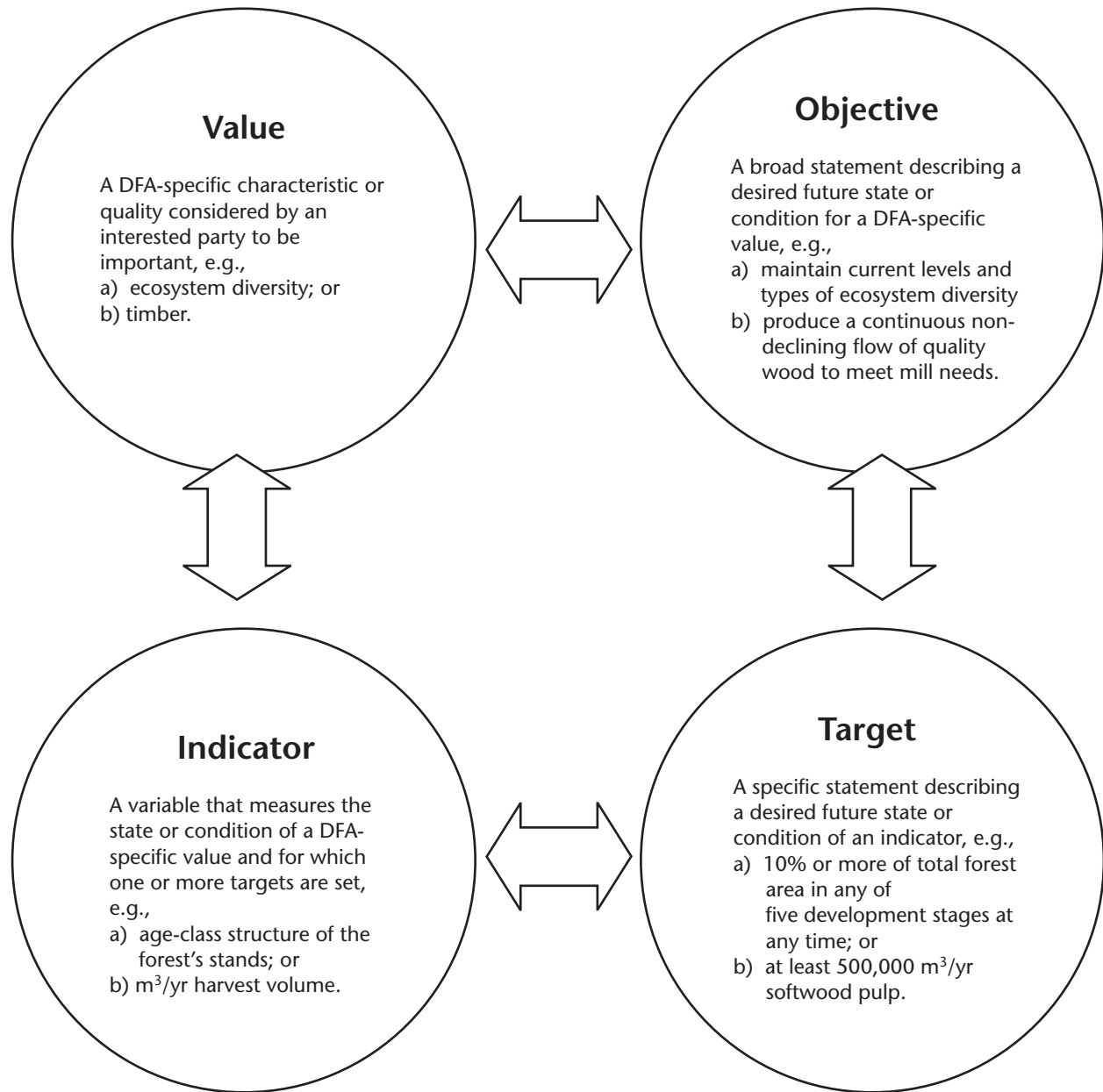


Figure 5
Relationships among Values, Objectives, Indicators, and Targets
(See Clause 3.1 and Figure 1.)

7.3.6.7 Making Forecasts

The process of making indicator forecasts requires specialized approaches that are appropriate to each indicator. Forecasts for quantitative indicators are normally made using mathematical models that may range from simple equations to complex computer models associated with GIS. On the other hand, forecasts for qualitative indicators are normally made using scenario-building techniques. Whatever approach is used, this Standard requires explicit forecasts for all indicators, along with an accompanying explanation of the analytical techniques used to generate them. The explanations need to make explicit the particular time and space considerations associated with each indicator, since many indicators change over time and are unevenly distributed across the DFA.

Organizations should address two issues when making indicator forecasts. The first is potential interactions among indicators. Many of the indicators chosen to represent DFA-specific values will not be independent of each other; forecasts for linked indicators need to be made using integrated models. The second issue relates to the fact that some indicators are influenced as much by other human actions in the DFA as they are by actions related to SFM. Examples include recreational forest use, and exploration and extraction of minerals and oil or gas from below the earth's surface. In such cases, there may be cumulative effects. In the context of this Standard, the cumulative effects on an indicator are those from SFM actions in combination with those from other actions. Organizations are urged to assess cumulative effects in their indicator forecasting exercises.

7.3.6.8 Monitoring Indicators

Adaptive management requires that all indicators for which forecasts were prepared be monitored over time during DFA plan implementation. The results of such monitoring are measured against the forecasts, with the aim of determining the magnitude and nature of differences between forecast and the monitoring data, and the reasons for the differences. Ultimately, the goal is to determine how and why forecasts are incorrect and to improve the forecasting models for use in the next round of SFM planning.

7.3.7 SFM Plan

The organization shall document, maintain, and make publicly available an SFM plan for the DFA.

The SFM plan for each DFA shall include

- a) a comprehensive description of the DFA;**
- b) a summary of the most recent forest management plan and the management outcomes, including the conclusions drawn in the management review;**
- c) a statement of values, objectives, indicators, and targets;**
- d) current status and forecasts for each indicator, including a description of the assumptions and analytical methods used for forecasting;**
- e) a description of the chosen strategy, including all significant actions to be undertaken and their associated implementation schedule;**
- f) a description of the monitoring program;**
- g) a comparative analysis of the actual and expected outcomes; and**
- h) a demonstration of the links between short-term operational plans and the SFM plan.**

An SFM plan is needed for each DFA. SFM plans should typically be made for a 20- to 25-year period and should be revised as necessary. The SFM plan is the principal vehicle for transforming the organization's commitments to SFM into actual actions in the forest. The SFM plan should summarize the current state of the DFA, as well as the values, objectives, indicators, and targets of SFM developed through the public participation process.

Organizations need to ensure that the SFM plan not only contains the right information but also presents the information in a way that makes it readily understandable to interested parties. The major challenge is to take the complicated technical components of the planning process and present them so that their essence and implications are easily comprehended. Organizations are encouraged to explore alternative forms for the communication of SFM plans, including customary print-based forms as well as a variety of digital forms (e.g., web sites, compact discs, and videos).

Due to the time horizon of an SFM plan, specific details about what is to be accomplished in any given year may not be included. As a result, short-term plans, including annual operating plans, that prescribe specific activities that will contribute to the overall implementation of the SFM plan should be developed. Short-term plans must clearly demonstrate how the planned activities lead to the achievement of the SFM targets. One method is to include benchmarks in short-term plans, which represent intermediate milestones along the way to achieving a target.

7.4 Implementation and Operation

7.4.1 Structure and Responsibility

Roles, responsibilities, and authorities required to implement and maintain conformance with the SFM requirements shall be defined, documented, and communicated within the organization.

The organization shall provide resources essential to the implementation and control of the SFM requirements. Resources include human resources and specialized skills, technology, and financial resources.

The organization shall appoint a specific management representative(s) who shall have defined roles, responsibilities, and authority for

- a) ensuring that the SFM requirements are established and maintained in accordance with this Standard; and
- b) reporting on the SFM requirements to top management for review and as a basis for continual improvement.

The capabilities and support required by an organization constantly evolve in response to changing requirements. To fulfill its SFM requirements, an organization should focus and align its people, systems, strategies, resources, and structure. The human resources, physical resources (e.g., facilities and equipment), and financial resources required to meet the SFM requirements (including the fulfillment of SFM targets) should be defined and made available to all levels of the organization. The allocation of sufficient resources to ensure the success of the SFM system is a measure of the organization's commitment.

The organizations and individuals responsible for the implementation of each aspect of the SFM requirements should be identified. General and specific responsibilities, authority, and accountability should be assigned to all persons whose activities influence the SFM requirements.

Within an organization there is usually one person who is appointed to be the SFM coordinator or management representative. This person uses the authority and resources given by top management to effect the implementation and maintenance of the SFM requirements.

7.4.2 Training, Awareness, Qualifications, and Knowledge

The organization shall identify training needs. It shall also ensure that personnel receive training related to the impact of their work upon the DFA and to their ability to ensure that the SFM requirements are met.

The organization shall establish and maintain procedures to make its personnel at each relevant function and level aware of

- a) the importance of conformance with the SFM policy and with the SFM requirements;
- b) the environmental impacts, actual or potential, of their work and the benefits of achieving the SFM requirements;
- c) their roles and responsibilities in achieving conformance with the SFM policy and with the SFM requirements, including emergency preparedness and response requirements; and
- d) the potential consequences of deviations from specified operating procedures.

The organization shall ensure that its personnel are qualified on the basis of appropriate training and/or work experience and have opportunities to gain new knowledge. The organization shall also require contractors working on its behalf to demonstrate that their personnel have the requisite training and awareness levels.

The organization shall improve knowledge about the DFA and SFM and shall monitor advances in SFM science and technology and incorporate them where and when applicable.

Top management has a key role to play in building awareness and motivating personnel by explaining the organization's commitment to SFM and communicating its commitment through the SFM policy. It is the actions of the individual people that transform the SFM requirements into an effective process leading to satisfactory on-site performance.

All personnel and contractors should be aware of the SFM requirements and how they are being met. Personnel and contractors should be provided with opportunities to include their input in the ongoing review of the SFM requirements. Motivation for continual improvement is enhanced when personnel and contractors are recognized for achieving SFM targets and encouraged to make suggestions that can lead to improved SFM.

The knowledge and skills necessary to achieve SFM should be identified. These should be considered in personnel selection, recruitment, training, skills development, and ongoing education. Appropriate training should be provided to all personnel within the organization and to relevant contractors.

Personnel and contractors should have a sound knowledge of the methods and skills required to perform their tasks in an efficient and competent fashion. They should also know the impact of their activities on SFM. Education and training are needed to ensure that personnel and contractors have appropriate and current knowledge of regulatory requirements, internal standards, and the organization's policies and targets. The level and details of training may vary according to the task.

Training programs typically include

- a) identification of qualification requirements for personnel and tasks;
- b) identification of personnel and contractor training needs;
- c) development of a training plan to address defined needs;
- d) verification of conformance of the training program to regulatory or organizational requirements;
- e) training of target personnel/contractor groups;
- f) documentation of training received; and
- g) evaluation of training received.

As a means to achieve continual improvement, the organization should monitor advances in SFM science and technology and incorporate them where and when applicable. The organization should also be engaged in the acquisition of knowledge about the DFA and SFM. This can be achieved through inventory data collection, gathering of conventional knowledge, and involvement in research, among other means.

7.4.3 Communication

7.4.3.1 General

The organization shall

- a) establish and maintain procedures for internal communication between its various levels and functions;
- b) establish and maintain procedures for receiving, documenting, and responding to relevant communication from external interested parties;
- c) make the SFM plan publicly available;
- d) make an annual report on its performance in meeting and maintaining the SFM requirements publicly available; and
- e) make the results of independent certification and surveillance audit reports publicly available.

7.4.3.2 Reporting Issues

The following are some issues to be considered in communication and reporting:

- a) What is the process for communicating with DFA-related workers and contractors?
- b) What is the process for communicating with external interested parties?
- c) What is the process for communicating the organization's SFM policy and performance?
- d) How are the results from internal and external audits communicated to all appropriate people in the organization?
- e) What is the process for making the SFM policy available to the public?
- f) Is internal communication adequate to support continual improvement of the SFM?

7.4.3.3 Reporting Processes

Communication includes establishing processes to report internally and, where desired, externally on the SFM activities of the organization in order to

- a) demonstrate commitment to the SFM requirements;
- b) deal with internal concerns and questions about the SFM requirements;
- c) raise awareness of the public participation process and the organization's SFM policy and plan (see Clause 7.3.7 for information on the contents of the SFM plan); and
- d) inform interested parties about the organization's progress in fulfilling the SFM requirements as appropriate and as required by this Standard.

Results from monitoring, measurement, performance checks, audits, and management reviews should be communicated to those within the organization who are responsible for delivering and managing these functions. In addition, the organization will likely need to develop a number of internal reports and schedules as part of the SFM requirements.

7.4.3.4 Annual Report

An annual report describing the organization's progress in meeting and maintaining the SFM requirements must be prepared and made available to the public. These annual reports may resemble the annual environmental reports that many organizations produce. The annual report should be open and factual so that the reader can be confident that all of the SFM requirements continue to be met and that the organization is living up to its SFM policy statement and its commitment to continual improvement. Progress, success, shortcomings, emerging issues, future plans, corrective actions, and management commitment are some of the topics an annual report should address. Readers of the report may not have been involved in the public participation process and will require information regarding all the main topics related to SFM in the DFA.

The provision of appropriate information to the organization's DFA-related workers, contractors, and other interested parties serves to motivate DFA-related workers and encourage public understanding and acceptance of the organization's efforts to improve its SFM performance.

7.4.4 SFM Documentation

7.4.4.1 General

The organization shall establish and maintain information, in paper or electronic form, to

- a) describe the SFM requirements and their interaction; and
- b) provide direction to related documentation.

Organizations shall ensure that DFA-related workers and contractors have access to documentation relevant to their responsibilities and tasks.

The primary purpose of SFM documentation is to describe the methods of fulfilling the SFM requirements. The nature of the documentation can vary depending on the size and complexity of the DFA and the organization(s) implementing the SFM requirements. Where SFM requirements are integrated with an organization's overall management system, the SFM documentation may be integrated into existing documentation.

7.4.4.2 SFM System Manual

Organizations may consider developing an SFM system manual as the main document to describe the methods of fulfilling each of the SFM requirements. Such a document would then serve as a reference for the implementation and maintenance of the SFM requirements. The SFM system manual is different from the SFM plan, which focuses on performance requirements.

It is not necessary for all documentation pertaining to the SFM requirements to be duplicated in the SFM system manual. Rather, the SFM system manual could provide direction to relevant documentation. The individual(s) or organization(s) responsible for each document should be clearly identified in the SFM system manual.

7.4.4.3 Documentation Issues

The following are some issues to be considered in documentation:

- a) How are documents and procedures identified, documented, communicated, and revised?
- b) Does the organization have a process for developing and maintaining documentation?
- c) How is SFM documentation integrated with existing documentation, where appropriate?
- d) How do personnel and contractors access the relevant documentation needed to fulfill their responsibilities and conduct their job activities?

The existence of good documentation encourages awareness on the part of personnel and contractors of the requirements of the SFM. Documentation also enables the evaluation of an organization's progress towards continual improvement and SFM.

7.4.5 Document Control

The organization shall establish and maintain procedures for controlling all documents (paper or electronic) required by this Standard to ensure that

- a) they can be readily located;
- b) they are periodically reviewed, revised as necessary, and approved for adequacy by authorized personnel;
- c) the current versions of relevant documents are available at all locations where operations essential to the fulfillment of the SFM requirements and the SFM plan are performed;
- d) obsolete documents are promptly removed from all points of issue and use, or otherwise assured against unintended use;
- e) any obsolete documents retained for legal and/or knowledge preservation purposes are suitably identified.

Documentation shall be legible, dated (with dates of revision), readily identifiable, maintained in an orderly manner, and retained for a specified period.

Procedures and responsibilities for the creation and modification of the various types of documents shall be established and maintained.

The purpose of documentation control is to ensure that the organization creates and maintains documents in a manner that is adequate to fulfill the requirements of this Standard.

7.4.6 Operational Procedures and Control

The organization shall

- a) identify the operational procedures and controls needed to meet the SFM requirements;
- b) establish and maintain documented procedures to cover situations where the absence of such procedures could lead to deviations from the SFM requirements;
- c) stipulate operating criteria, including maintenance and calibration requirements;
- d) communicate relevant procedures, controls, and requirements to suppliers and contractors; and
- e) ensure that contractors working on behalf of the organization have the necessary operational procedures and controls.

Implementation of the SFM requirements and the SFM plan is accomplished through the establishment and maintenance of operational procedures and controls. These are often referred to as best management practices, work instructions, standard operating procedures, etc. Such operational controls are designed to ensure that activities or tasks are completed in a systematic way with desired outcomes. Operational controls also increase the probability that legal requirements are met and allow for targeted training of new personnel and contractors. Operational controls should be detailed and specific and should focus on operational specifications and thresholds that are easily and clearly understood by DFA-related workers.

When the registration applicant comprises more than one organization, various operational procedures and controls are acceptable, provided that they enable each organization to meet the requirements of the SFM plan.

7.4.7 Emergency Preparedness and Response

The organization shall

- a) establish and maintain procedures to identify the potential for and to respond to accidents and emergencies on the DFA;
- b) establish and maintain procedures to prevent and mitigate the impacts that may be associated with accidents and emergencies;
- c) review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergencies; and
- d) where practicable, periodically test procedures.

Emergency plans and procedures should be established to ensure that there will be an appropriate response to unexpected incidents or accidents. The organization should define the types of emergencies that may occur in the DFA and maintain procedures for dealing with them. Types of emergencies could include fire or spills of hazardous material onto land or into water. Contingency plans should be developed for forest disturbances such as insect and disease outbreaks and blowdown.

The procedures should take into account incidents arising, or likely to arise, as consequences of both normal operating conditions and abnormal or unique operating conditions.

Emergency plans may include

- a) a list of types of emergencies;
- b) identification of emergency organizations and responsibilities;
- c) a list of key personnel and their contact information;
- d) details of emergency services (e.g., fire control and spill clean-up services);
- e) internal and external communication plans;
- f) actions taken in the event of different types of emergencies;
- g) information on hazardous materials, including each material's potential impact on the environment and measures to be taken in the event of accidental release;
- h) provisions for clean up and remediation as necessary;
- i) training plans and testing for effectiveness.

For further information, see CSA Z731.

7.5 Checking and Corrective Action

7.5.1 Monitoring and Measurement

7.5.1.1 General

The organization shall

- a) establish and maintain documented procedures to monitor, on a regular basis, the key characteristics of its operations and activities that demonstrate progress towards SFM in the DFA. This shall include the recording of performance levels, relevant operational controls, and conformance with the SFM requirements;
- b) monitor the indicators for comparison against the forecasts; and
- c) establish and maintain a documented procedure for periodically evaluating compliance with relevant legislation and regulations, and conformance with relevant policies applying to the DFA. If non-compliances or nonconformances are found, the organization shall address these through the corrective and preventive action process.

The real test of success in implementing the SFM requirements is comparing the indicator conditions that evolve over time with those that were forecast, and then assessing the acceptability of any variances. The periodic assessment of indicator conditions is the key to determining if values are being sustained and

SFM targets are being achieved. Understanding the reasons for variances between the actual and forecast results is essential to continual improvement. Management strategies should be adapted accordingly.

7.5.1.2 Assessing the Public Participation Process

At periodic intervals, the organization and those involved in the public participation process should undertake an assessment of the entire public participation process to ensure that it continues to meet SFM requirements and participants' expectations.

7.5.1.3 Assessing Values, Objectives, Indicators, and Targets

As knowledge and experience are gained and objectives achieved, organizations should continue to assess the quality and validity of their values, objectives, indicators, and targets.

7.5.1.4 Assessing SFM Performance Requirements

Indicators should be compared against targets (or shorter-term benchmarks) according to a defined schedule. Unacceptable variances from any target should be identified, and the reasons determined and explained. Such variances may be caused by, among other things, failure to implement fully the activities specified in the SFM plan, deficiencies in the information available when setting targets that may have led to false assumptions about the feasibility of achieving the targets, a poor choice of indicator, or factors beyond the control of the organization. This analysis of variances will allow the organization to determine whether progress towards the stated objectives is being made.

7.5.1.5 Assessing the SFM System Requirements

Since the SFM system requirements are the delivery mechanism for the overall SFM requirements, the effectiveness of the SFM system should be regularly assessed and improved as necessary. This is usually achieved through the internal audit and corrective and preventive action processes.

7.5.1.6 Legal Compliance

Compliance with legal requirements is a critical part of the SFM requirements. The key steps to assuring legal compliance include obtaining a thorough knowledge of the applicable legal requirements, ensuring that all legal requirements are met, taking the necessary and appropriate corrective and preventive actions if a legal requirement is not met, and maintaining a mechanism for periodically evaluating compliance.

7.5.2 Corrective and Preventive Action

The organization shall establish and maintain procedures for

- a) defining responsibility and authority for identifying and investigating nonconformance;**
- b) taking action to mitigate any impacts caused; and**
- c) initiating and completing corrective and preventive action.**

Any corrective or preventive action taken to eliminate the causes of actual and potential nonconformances shall be appropriate to the magnitude of problem and commensurate with the impact encountered.

The organization shall implement and record any changes in the documented procedures resulting from corrective and preventive action. The findings, conclusions, and recommendations reached as a result of observation, measuring, monitoring, audits, and other reviews of the SFM requirements should be documented, and the necessary corrective and preventive actions identified. Management should ensure that these corrective and preventive actions have been implemented and that there is systematic follow-up to ensure their completion and effectiveness. Corrective actions are meant to correct a problem or a condition as soon as it is identified. Preventive actions attempt to prevent problems or conditions from happening or recurring.

7.5.3 Records

The organization shall establish and maintain procedures for the identification, maintenance, and disposition of SFM requirement records. These records shall include training records and the results of audits and reviews.

SFM requirement records shall be legible, identifiable, and traceable to the activity involved. SFM requirement records shall be stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration, or loss. Their retention times shall be established and recorded.

Records shall be maintained, in a manner appropriate to the system and to the organization, to demonstrate conformance to the requirements of this Standard.

Records are evidence of the ongoing maintenance of the SFM requirements and the progress towards targets. The number and types of records will vary greatly among DFAs and organizations. Records should include all the documents necessary to demonstrate conformance with the SFM requirements. The list of necessary records should include those dealing with the public participation process, the SFM performance requirements, and the SFM system requirements.

To fulfill the SFM requirements, the organization must maintain a range of records and information. Effective management of these records is essential to the successful implementation and maintenance of the SFM requirements. Good information and record management involves establishing means of identification, collection, indexing, filing, storage, maintenance, retrieval, retention, and disposition of pertinent documentation and records.

7.5.4 Internal Audits to the SFM Requirements

The organization shall

- a) establish and maintain procedures for annual internal audits to ensure that it conforms to the SFM requirements set out in this Standard; and
- b) provide information on the results of these internal audits to top management.

The organization's internal audit program, including any schedules, shall be based on the importance of the specific SFM activity and the results of previous audits.

To be comprehensive, the audit procedures shall cover the audit scope, frequency, and methods, as well as the responsibilities and requirements for conducting audits, auditor qualifications, and reporting results.

Because these audits are meant to encourage continual improvement inside the organization, the audits can be carried out by personnel who are internal to the organization and/or by external parties selected by the organization. In any case, the person(s) conducting such audits should be properly trained and should strive to be objective and impartial. Audit procedures and protocols should be clearly defined.

The internal audit report should be submitted to top management for review and to individuals who can and will act on the audit results.

7.6 Management Review

The organization's top management shall, at least annually, review the SFM requirements to ensure that progress towards SFM continues to be suitable, adequate, and effective. The management review process shall ensure that the information necessary to allow top management to carry out this evaluation is collected. This review shall be documented.

In order to be adaptive, the management review shall address the possible need for changes to policy, targets, and other SFM requirements, in light of audit results, changing circumstances, and the commitment to continual improvement.

An organization should review its performance in meeting the SFM requirements and continually improve its progress in achieving SFM.

The organization's top management should, at appropriate intervals, conduct a complete and thorough review. The review should be broad enough in scope to address all dimensions of the SFM requirements and the DFA. The review should include

- a) the public participation process;
- b) the values, objectives, indicators, targets, reviews, and forecasts;
- c) performance in relation to targets;
- d) findings of audits (internal and external);
- e) corrective and preventive actions;
- f) the SFM policy and the need for changes;
- g) changing legislation or other relevant requirements;
- h) changing expectations, requirements, or responsibilities of interested parties;
- i) changes in types of forest operations or forest activities;
- j) changes in the organization or in resource requirements and availability;
- k) advances in science and technology;
- l) lessons learned from experience; and
- m) changes in the DFA.

Annex A (informative)

Certification (Registration) Framework

Note: *This Annex is not a mandatory part of this Standard.*

A.1 General

Part of the certification process for a DFA involves determining if the organization has met all the public participation requirements (Clause 5), SFM performance requirements (Clause 6), and SFM system requirements (Clause 7) of this Standard. This determination involves an audit undertaken by a third-party independent registrar accredited by the Standards Council of Canada. The audit ensures that the SFM requirements are met and includes an on-site audit of the DFA, including field inspections of forest sites.

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 nonconformances.

While it is up to the registrar to determine nonconformances, a major nonconformance is any one or combination of the following:

- a) one or more numbered requirements of this Standard have not been addressed;
- b) one or more numbered requirements of this Standard have not been implemented; or
- c) several nonconformances exist that, taken together, lead the auditor to conclude that one or more numbered requirements of this Standard have not been addressed.

A list of accredited registrars is available from the Standards Council of Canada (Tel: 613-238-3222; Web site: www.scc.ca). The Standards Council of Canada accredits national third-party independent registrars (certifiers) who have trained and qualified auditors with the requisite forestry and environmental management system expertise to conduct audits according to Canada's national guidelines.

Many organizations and forest owners may wish to obtain third-party independent certification (registration) of their SFM system and related DFA to demonstrate conformance with the requirements of this Standard. These SFM certifications must be conducted by registrars that are accredited by the Standards Council of Canada.

The steps described in Clause A.2 are those that an organization and registrar take to obtain certification to this Standard.

Note: *Audit procedures can be found in CSA PLUS 1133. Auditor qualifications can be found in CSA PLUS 1134.*

A.2 Certification Process

A.2.1 Application

A formal application for certification is filed by the organization with the registrar (certifier).

A.2.2 Preliminary Assessment/Documentation Review

The registrar assigns an audit team leader to the project. The auditor reviews the details of the registration applicant and the DFA. All necessary information and documentation from the registration applicant needs to be provided to the registrar. The assessment also evaluates the organization's state of preparedness for the upcoming certification audit. The preliminary assessment generally takes place in the organization's office, with some time spent in the DFA assessing actual forest conditions, operations, and the organization's field interpretation of values, objectives, indicators, and targets.

A.2.3 Certification Audit

The purpose of the certification audit is to verify that the organization meets the requirements of its documentation, its SFM plan, and this Standard. A high proportion of the audit time is spent in the DFA

assessing actual forest conditions, operations, and the organization's field interpretation and implementation of values, objectives, indicators, and targets. The audit team makes a recommendation for certification based on the audit results.

A.2.4 Certification

The registrar's certification team grants the certificate of registration based on the audit team's recommendations after a thorough review of the complete audit file documentation and completion of all audit activities.

A.2.5 Surveillance Audits

On a periodic basis (at least every 12 months), registrars audit the organization to the SFM requirements and verify field performance to ensure that it continues to meet the requirements of certification. This includes the continued satisfaction of the requirements of this Standard.

A.2.6 Re-certification Audit

A full re-certification audit takes place in accordance with the requirements of the Standards Council of Canada, and if the organization passes, it maintains its certification.* For information regarding specific conformity assessment requirements (e.g., audit frequency, etc.), please contact the Standards Council of Canada accredited environmental management systems (EMS) registration organizations. They are able to provide further details as required.

**Regular surveillance audits are conducted by the registrar to ensure that the certified organization meets the requirements on an ongoing basis.*

A.2.7 SFM Audit Reports (Initial Certification and Surveillance)

The audit report is prepared under the direction of the lead auditor, who is responsible for its accuracy and completeness. The audit report should be signed by the lead auditor. The audit report should contain the audit findings or a summary thereof with reference to supporting evidence. Subject to agreement between the lead auditor and the auditee, the report may also include additional items. See *IAF Guidance on the Application of ISO/IEC Guide 66* for further details on content of the audit report.

In accordance with the requirements of this Standard, it is the responsibility of the auditee to make the audit report available to the public.

A.2.8 Dispute Resolution

Appeals, complaints, and disputes regarding an organization's accredited certification to this Standard can be filed by any interested party, including those involved in the public participation process. If the matter is in regard to the contents of this Standard, the CSA should be contacted. If the matter pertains to a certified client, the registrar/certifier should be contacted.

If the matter is not addressed to the satisfaction of the interested party following this procedure, or if the matter lies outside the scope of CSA or the registrar/certifier, then the Standards Council of Canada should be approached.

A.2.9 Objectivity, Independence, and Competence

To ensure the objectivity of the audit process and its findings and conclusions, the members of the audit team should be independent of the activities they audit. They should be objective and free from bias and conflicts of interest throughout the process. The audit team members should possess an appropriate combination of knowledge, skill, and experience to carry out audit responsibilities (see CAN/CSA-ISO 19011).

Registration organizations or any related organization should not be involved in consulting activities to

- a) obtain or maintain SFM system registration; or
- b) provide services to design, implement, or maintain SFM systems.

Registration organizations and their auditors should neither offer nor provide consulting services or advice as part of a pre-assessment, an initial assessment, an audit, or a re-assessment. Registration organizations, their employees, their subcontractors, and the agents involved in any SFM system

registration activity (assessment, audit, or re-assessment) should not have been involved in any consulting relating to SFM systems for a registration applicant or any company related to that registration applicant within two years prior to the beginning of the registration activity. The auditors and their dependents should not have a direct or indirect interest in the DFA or the registration applicant.

Annex B (normative)

Summary of Requirements of Z809

Note: This Annex is a mandatory part of this Standard.

4. Sustainable Forest Management Requirements

4.1 General Requirements

The organization shall meet the SFM requirements of this Standard, which include but are not limited to

- a) compliance with relevant legislation on the DFA;
- b) appropriate values, objectives, indicators, and targets that clearly address the CCFM SFM criteria and CSA SFM elements in this Standard;
- c) ongoing and meaningful public participation;
- d) progress towards or achievement of performance targets; and
- e) continual improvement in performance.

4.2 Required Activities

To meet all the SFM requirements of this Standard, the organization shall meet the

- a) public participation requirements described in Clause 5;
- b) performance requirements described in Clause 6; and
- c) system requirements described in Clause 7.

5. Public Participation Requirements

5.1 Basic Requirements

The organization shall establish and implement a public participation process by either

- a) starting a new process;
- b) building on an existing process; or
- c) reviving a previous process.

5.2 Interested Parties

The organization shall

- a) openly seek representation from a broad range of interested parties, including DFA-related workers, and invite them to participate in developing the public participation process;
- b) provide interested parties with relevant background information;
- c) demonstrate through documentation that efforts were made to contact Aboriginal forest users and communities affected by or interested in forest management in the DFA;
- d) demonstrate through documentation that efforts were made to encourage Aboriginal forest users and communities to become involved in identifying and addressing SFM values;
- e) recognize Aboriginal and treaty rights and agree that Aboriginal participation in the public participation process will not prejudice those rights; and
- f) establish and maintain a list of interested parties, including those that chose to participate, those that decided not to participate, and those that were unable to participate. The list shall contain names and contact information, as well as any links to the organization.

5.3 Process

5.3.1 Basic Operating Rules

The organization shall demonstrate that

- a) the public participation process works according to clearly defined operating rules that contain provisions on
 - i) content;

- ii) goals;
 - iii) timelines;
 - iv) internal and external communication;
 - v) resources (including human, physical, financial, information, and technological, as necessary and reasonable);
 - vi) roles, responsibilities, and obligations of participants and their organizations;
 - vii) conflict of interest;
 - viii) decision-making methods;
 - ix) authority for decisions;
 - x) mechanisms to adjust the process as needed;
 - xi) access to information (including this Standard);
 - xii) the participation of experts, other interests, and government; and
 - xiii) a dispute-resolution mechanism; and
- b) the participants have agreed to the public participation process operating rules.

5.4 Content

- a) In the public participation process, interested parties shall have opportunities to work with the organization and interact 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 on the DFA; and
- b) The organization and the public participation process shall ensure that the values, objectives, indicators, and targets are consistent with relevant government legislation, regulations, and policies.

5.5 Communication

The organization shall

- a) provide access to information about the DFA and the SFM requirements;
- b) provide information to a broader public about the progress being made in the implementation of this Standard;
- c) make allowances for different linguistic, cultural, geographic, or informational needs of interested parties;
- d) demonstrate that there is ongoing public communication about the DFA, including the public participation process; and
- e) demonstrate that all input is considered, and responses are provided.

6. SFM Performance Requirements: CCFM SFM Criteria and CSA SFM Elements

The organization, in conformance with the public participation process requirements set out in Clause 5, shall identify DFA-specific values, objectives, indicators, and targets for each of the CSA SFM elements described in Clause 6, as well as any other values associated with the DFA.

CCFM Criterion 1 — Conservation of Biological Diversity

Conserve biological diversity by maintaining integrity, function, and diversity of living organisms and the complexes of which they are part.

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 DFA.

CSA SFM Element 1.2 Species Diversity

Conserve species diversity by ensuring that habitats for the native species found in the DFA are maintained through time.

CSA SFM Element 1.3 Genetic Diversity

Conserve genetic diversity by maintaining the variation of genes within species.

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 DFA and implement management strategies appropriate to their long-term maintenance.

CCFM Criterion 2 — Maintenance and Enhancement of Forest Ecosystem Condition and Productivity

Conserve forest ecosystem condition and productivity by maintaining the health, vitality, and rates of biological production.

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.

CCFM Criterion 3 — Conservation of Soil and Water Resources

Conserve soil and water resources by maintaining their quantity and quality in forest ecosystems.

CSA SFM Element 3.1 Soil Quality and Quantity

Conserve soil resources by maintaining soil quality and quantity.

CSA SFM Element 3.2 Water Quality and Quantity

Conserve water resources by maintaining water quality and quantity.

CCFM Criterion 4 — Forest Ecosystem Contributions to Global Ecological Cycles

Maintain forest conditions and management activities that contribute to the health of global ecological cycles.

CSA SFM Element 4.1 Carbon Uptake and Storage

Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems.

CSA SFM Element 4.2 Forest Land Conversion

Protect forestlands from deforestation or conversion to non-forests.

CCFM Criterion 5 — Multiple Benefits to Society

Sustain flows of forest benefits for current and future generations by providing multiple goods and services.

CSA SFM Element 5.1 Timber and Non-Timber Benefits

Manage the forest sustainably to produce an acceptable and feasible mix of both timber and non-timber benefits.

CSA SFM Element 5.2 Communities and Sustainability

Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and to participate in their use and management.

CSA SFM Element 5.3 Fair Distribution of Benefits and Costs

Promote the fair distribution of timber and non-timber benefits and costs.

CCFM Criterion 6 — Accepting Society’s Responsibility for Sustainable Development

Society’s responsibility for sustainable forest management requires that fair, equitable, and effective forest management decisions are made.

CSA SFM Element 6.1 Aboriginal and Treaty Rights

Recognize and respect Aboriginal and treaty rights.

CSA SFM Element 6.2 Respect for Aboriginal Forest Values, Knowledge, and Uses

Respect traditional Aboriginal forest values and uses identified through the Aboriginal input process.

CSA SFM Element 6.3 Public Participation

Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants.

CSA SFM Element 6.4 Information for Decision-Making

Provide relevant information to interested parties to support their involvement in the public participation process, and increase knowledge of ecosystem processes and human interactions with forest ecosystems.

7. SFM System Requirements: The Continual Improvement Loop

7.1 General

The organization shall establish and maintain an SFM system, as described in Clause 7.

7.2 SFM Policy

The top management shall define and maintain the organization’s SFM commitment through policy statements and/or other documented public statements.

The statement(s) shall contain a commitment to

- a) achieve and maintain SFM;
- b) meet or exceed all relevant legislation, regulations, policies, and other requirements to which the organization subscribes;
- c) respect Aboriginal and treaty rights;
- d) provide for public participation;
- e) provide participation opportunities for Aboriginal peoples with respect to their rights and interests in SFM;
- f) provide conditions and safeguards for the health and safety of DFA-related workers and the public;
- g) improve knowledge about the forest and SFM and to monitor advances in SFM science and technology and incorporate them where applicable; and
- h) demonstrate continual improvement in SFM.

The statement(s) shall be documented, communicated, and made readily available.

7.3 Planning

7.3.1 Defined Forest Area (DFA)

The organization shall designate a clearly defined forest area to which this Standard applies. The organization shall define the geographic extent and the respective ownership and management responsibilities for the DFA.

7.3.2 Ownership Rights and Responsibilities

The organization shall respect the legal rights and responsibilities of other parties in the DFA that are not part of the registration applicant.

7.3.3 Shared Responsibilities

7.3.3.1 General

The organization shall ensure that all parties necessary to address the CSA SFM elements for the DFA are involved in the process. The organization shall clearly describe the respective roles and responsibilities of the parties involved.

7.3.4 Rights and Regulations

The organization shall

- a) demonstrate that relevant legislation and regulatory requirements that relate to ownership, tenures, and rights and responsibilities in the DFA have been identified and complied with;
- b) demonstrate that Aboriginal and treaty rights have been identified and respected;
- c) demonstrate that the legal and constitutional rights, and the health and safety of DFA-related workers, are respected and their contributions to SFM are encouraged;
- d) demonstrate that the acquired and legal rights of private woodlot owners to set their own values, objectives, indicators, and targets relating to their properties are respected; and
- e) establish and maintain procedures to identify and have access to all legal and other requirements to which the organization subscribes that are applicable to the DFA. This includes requirements that relate to ownership tenures, rights, and responsibilities in the DFA.

7.3.5 Incorporation of Public Participation Requirements

The public participation requirements set out in Clause 5 of this Standard shall be incorporated into the SFM system.

7.3.6 Setting DFA-Specific Performance Requirements

7.3.6.1 General

The organization, working with interested parties in the public participation process at each stage, shall establish DFA-specific performance requirements that address all the CSA SFM elements in Clause 6. The work shall be recorded in the SFM plan and shall be summarized in accordance with the example in Annex C.

For each element, one or more DFA-specific values shall be identified.

For each value, one or more objectives shall be set.

For each value, one or more indicators shall be identified. Indicators shall be quantitative where feasible.

For each indicator, data on the current status shall be provided, and one target shall be set. Each target shall specify acceptable levels of variance for the indicator and clear time frames for achievement.

Alternative strategies shall be identified and elaborated.

Forecasts shall be prepared for the expected responses of each indicator to each alternative strategy. Assumptions and analytical methods used for making each forecast shall be described.

During plan implementation, measurements shall be taken for each indicator at appropriate times and places. Measurement results shall be interpreted in the context of the forecasts in the SFM plan. See Clauses 7.5.1 and 7.6 for the continuation of the adaptive management process.

7.3.7 SFM Plan

The organization shall document, maintain, and make publicly available an SFM plan for the DFA. The SFM plan for each DFA shall include

- a) a comprehensive description of the DFA;
- b) a summary of the most recent forest management plan and the management outcomes, including the conclusions drawn in the management review;
- c) a statement of values, objectives, indicators, and targets;
- d) current status and forecasts for each indicator, including a description of the assumptions and analytical methods used for forecasting;
- e) a description of the chosen strategy, including all significant actions to be undertaken and their associated implementation schedule;
- f) a description of the monitoring program;
- g) a comparative analysis of the actual and expected outcomes; and
- h) a demonstration of the links between short-term operational plans and the SFM plan.

7.4 Implementation and Operation

7.4.1 Structure and Responsibility

Roles, responsibilities, and authorities required to implement and maintain conformance with the SFM requirements shall be defined, documented, and communicated within the organization.

The organization shall provide resources essential to the implementation and control of the SFM requirements. Resources include human resources and specialized skills, technology, and financial resources.

The organization shall appoint a specific management representative(s) who shall have defined roles, responsibilities, and authority for

- a) ensuring that the SFM requirements are established and maintained in accordance with this Standard; and
- b) reporting on the SFM requirements to top management for review and as a basis for continual improvement.

7.4.2 Training, Awareness, Qualifications, and Knowledge

The organization shall identify training needs. It shall also ensure that personnel receive training related to the impact of their work upon the DFA and to their ability to ensure that the SFM requirements are met.

The organization shall establish and maintain procedures to make its personnel at each relevant function and level aware of

- a) the importance of conformance with the SFM policy and with the SFM requirements;
- b) the environmental impacts, actual or potential, of their work and the benefits of achieving the SFM requirements;
- c) their roles and responsibilities in achieving conformance with the SFM policy and with the SFM requirements, including emergency preparedness and response requirements; and
- d) the potential consequences of deviations from specified operating procedures.

The organization shall ensure that its personnel are qualified on the basis of appropriate training and/or work experience and have opportunities to gain new knowledge. The organization shall also require contractors working on its behalf to demonstrate that their personnel have the requisite training and awareness levels.

The organization shall improve knowledge about the DFA and SFM and shall monitor advances in SFM science and technology and incorporate them where and when applicable.

7.4.3 Communication

7.4.3.1 General

The organization shall

- a) establish and maintain procedures for internal communication between its various levels and functions;

- b) establish and maintain procedures for receiving, documenting, and responding to relevant communication from external interested parties;
- c) make the SFM plan publicly available;
- d) make an annual report on its performance in meeting and maintaining the SFM requirements publicly available; and
- e) make the results of independent certification and surveillance audit reports publicly available.

7.4.4 SFM Documentation

7.4.4.1 General

The organization shall establish and maintain information, in paper or electronic form, to

- a) describe the SFM requirements and their interaction; and
- b) provide direction to related documentation.

Organizations shall ensure that DFA-related workers and contractors have access to documentation relevant to their responsibilities and tasks.

7.4.5 Document Control

The organization shall establish and maintain procedures for controlling all documents (paper or electronic) required by this Standard to ensure that

- a) they can be readily located;
- b) they are periodically reviewed, revised as necessary, and approved for adequacy by authorized personnel;
- c) the current versions of relevant documents are available at all locations where operations essential to the fulfillment of the SFM requirements and the SFM plan are performed;
- d) obsolete documents are promptly removed from all points of issue and use, or otherwise assured against unintended use;
- e) any obsolete documents retained for legal and/or knowledge preservation purposes are suitably identified.

Documentation shall be legible, dated (with dates of revision), readily identifiable, maintained in an orderly manner, and retained for a specified period.

Procedures and responsibilities for the creation and modification of the various types of documents shall be established and maintained.

7.4.6 Operational Procedures and Control

The organization shall

- a) identify the operational procedures and controls needed to meet the SFM requirements;
- b) establish and maintain documented procedures to cover situations where the absence of such procedures could lead to deviations from the SFM requirements;
- c) stipulate operating criteria, including maintenance and calibration requirements;
- d) communicate relevant procedures, controls, and requirements to suppliers and contractors; and
- e) ensure that contractors working on behalf of the organization have the necessary operational procedures and controls.

7.4.7 Emergency Preparedness and Response

The organization shall

- a) establish and maintain procedures to identify the potential for and to respond to accidents and emergencies on the DFA;
- b) establish and maintain procedures to prevent and mitigate the impacts that may be associated with accidents and emergencies;
- c) review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergencies; and
- d) where practicable, periodically test procedures.

7.5 Checking and Corrective Action

7.5.1 Monitoring and Measurement

7.5.1.1 General

The organization shall

- a) establish and maintain documented procedures to monitor, on a regular basis, the key characteristics of its operations and activities that demonstrate progress towards SFM in the DFA. This shall include the recording of performance levels, relevant operational controls, and conformance with the SFM requirements;
- b) monitor the indicators for comparison against the forecasts; and
- c) establish and maintain a documented procedure for periodically evaluating compliance with relevant legislation and regulations, and conformance with relevant policies applying to the DFA. If non-compliances or nonconformances are found, the organization shall address these through the corrective and preventive action process.

7.5.2 Corrective and Preventive Action

The organization shall establish and maintain procedures for

- a) defining responsibility and authority for identifying and investigating nonconformance;
- b) taking action to mitigate any impacts caused; and
- c) initiating and completing corrective and preventive action.

Any corrective or preventive action taken to eliminate the causes of actual and potential nonconformances shall be appropriate to the magnitude of the problem and commensurate with the impact encountered.

7.5.3 Records

The organization shall establish and maintain procedures for the identification, maintenance, and disposition of SFM requirement records. These records shall include training records and the results of audits and reviews.

SFM requirement records shall be legible, identifiable, and traceable to the activity involved. SFM requirement records shall be stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration, or loss. Their retention times shall be established and recorded.

Records shall be maintained, in a manner appropriate to the system and to the organization, to demonstrate conformance to the requirements of this Standard.

7.5.4 Internal Audits to the SFM Requirements

The organization shall

- a) establish and maintain procedures for annual internal audits to ensure that it conforms to the SFM requirements set out in this Standard; and
- b) provide information on the results of these internal audits to top management.

The organization's internal audit program, including any schedules, shall be based on the importance of the specific SFM activity and the results of previous audits.

To be comprehensive, the audit procedures shall cover the audit scope, frequency, and methods, as well as the responsibilities and requirements for conducting audits, auditor qualifications, and reporting results.

7.6 Management Review

The organization's top management shall, at least annually, review the SFM requirements to ensure that progress towards SFM continues to be suitable, adequate, and effective. The management review process shall ensure that the information necessary to allow top management to carry out this evaluation is collected. This review shall be documented.

In order to be adaptive, the management review shall address the possible need for changes to policy, targets, and other SFM requirements, in light of audit results, changing circumstances, and the commitment to continual improvement.

Annex C (informative) Sample Table for Setting and Recording DFA-Specific Performance Requirements

Note: This Annex is not a mandatory part of this Standard.

CCFM criterion	CSA SFM elements	Value	Objective	Indicator	Target	Basis for the target	Legal requirements	Means of achieving objective and target	Monitoring and measurement	Acceptable variance
Conservation of soil and water resources	Conserve soil resources by maintaining soil quality and quantity	Conserved soil	1. Minimize forest areas lost to primary roads	Kilometres of newly constructed roads	x km or less of new primary roads constructed in operating year	<ul style="list-style-type: none"> provincial strategies historical data on road construction reviews of feasibility of alternative options (access different stands, construct secondary or tertiary roads, hell-log) 	<ul style="list-style-type: none"> approved forest management plan allows for x km of new primary roads 	<ul style="list-style-type: none"> road location done with objective in mind reduce road construction implement alternatives (specify the alternatives chosen) 	<ul style="list-style-type: none"> monitor km of primary roads built compare allocated roads to constructed roads annually measure km of roads built 	<ul style="list-style-type: none"> plus x km of constructed primary roads
			2. Minimize forest areas lost to landings	Hectares of forest used for landings	x% or less of forest area will be designated as landings each year	<ul style="list-style-type: none"> provincial strategies historical data on landing construction reviews of feasibility of alternative options (access different stands, harvesting methods) 	<ul style="list-style-type: none"> x% of forest area annually will be designated as landings (max) 	<ul style="list-style-type: none"> landing location done with objective in mind reduce landing construction implement alternatives (specify the alternatives chosen) 	<ul style="list-style-type: none"> annual inventory of forest designated as landing measure landing in hectares 	<ul style="list-style-type: none"> plus x %

Proposition de modification

N'hésitez pas à nous faire part de vos suggestions et de vos commentaires. Au moment de soumettre des propositions de modification aux normes CSA et autres publications CSA prière de fournir les renseignements demandés ci-dessous et de formuler les propositions sur une feuille volante. Il est recommandé d'inclure

- le numéro de la norme/publication
- le numéro de l'article, du tableau ou de la figure visé
- la formulation proposée
- la raison de cette modification.

Nom/Name: _____

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Proposal for change

CSA welcomes your suggestions and comments. To submit your proposals for changes to CSA Standards and other CSA publications, please supply the information requested below and attach your proposal for change on a separate page(s). Be sure to include the

- Standard/publication number
- relevant Clause, Table, and/or Figure number(s)
- wording of the proposed change
- rationale for the change.



ISBN 1-55397-087-X