

**Working Paper:**  
**Developing a Sustainable Forest Management Plan**

SFMP Working Group  
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## Table of Contents

<b><i>Introduction</i></b> .....	<b>4</b>
<b><i>Part I: Background, Context and Overview of SFMPs</i></b> .....	<b>5</b>
<b>Who should prepare an SFMP?</b> .....	<b>5</b>
<b>Criteria and indicators</b> .....	<b>5</b>
<b>Ongoing improvements</b> .....	<b>6</b>
<b>Links to other initiatives</b> .....	<b>6</b>
Sustainable Resource Management Plans and Other Strategic Plans.....	6
Results Based Code.....	7
Forest Investment Account .....	7
Forest Management Certification.....	7
Timber Supply Analysis.....	7
Other Planning Documents .....	7
<b><i>Part II: SFMP Template</i></b> .....	<b>9</b>
<b>Introduction</b> .....	<b>9</b>
<b>Purpose</b> .....	<b>9</b>
<b>Responsible parties</b> .....	<b>9</b>
<b>Defined forest area</b> .....	<b>9</b>
<b>Strategic plans applying to the defined forest area</b> .....	<b>10</b>
<b>Public and First Nations participation</b> .....	<b>10</b>
Public Participation.....	10
First Nations Participation .....	10
<b>Goals, indicators and targets</b> .....	<b>11</b>
Goals .....	11
Indicators .....	11
Targets .....	12
Rationale for Indicators and Targets .....	13
Current State of Indicators .....	13
Forecasting and Expected Trends of Indicators .....	13
Monitoring and Evaluation Procedures.....	13
Implementation Plans.....	13

*Appendix 1: Additional Sources of Information ..... 14*  
*Appendix 2: Strategic Landscape-level Objectives ..... 16*  
*Appendix 3: Example Indicators..... 18*  
*Appendix 4: Listing of Revisions..... 20*

## **Introduction**

The government of British Columbia encourages sustainable forest management to balance the economic and social benefits of timber harvesting with maintaining healthy forest ecosystems.

Sustainable Forest Management Plans (SFMPs) are planning documents that lay the foundation for achieving sustainable forest management by setting goals, indicators and targets for a defined forest area. While there is no legislated mandate for SFMPs, and no government approval process, SFMPs fit well within the current forest legislation framework and are compatible with the Results Based Code.

The following document has two main parts. Part I deals with the background and context of SFMPs, and provides a brief overview of the process. Part II provides a template of suggested headings and contents for developing an SFMP.

## **Part 1: Background, Context and Overview of SFMPs**

### **Who should prepare an SFMP?**

Typically, one or more forest licensees will initiate an SFMP for a Tree Farm License (TFL), Timber Supply Area (TSA), or a portion of a TSA where forest management responsibilities are held. BC Timber Sales may also choose to participate in the development of a licensee-led SFMP in areas where they operate.

Licensees are encouraged to develop SFMPs to fulfil as many roles as possible, such as those listed below:

- Provide rationale for Forest Investment Account funding decisions.
- Assist in the development of strategic landscape-level objectives.
- Create an effective link between strategic land-use objectives and operational activities through tactical strategies.
- Support a number of international forest certification initiatives.
- Enhance involvement in resource management by the public, third party interests, and First Nations.
- Integrate evidence required for approval of Results Based Code Resource Development Permits.
- Support defined forest area management responsibilities, such as timber supply reviews and forest health provisions.
- Act as a repository for specific planning documents, such as Pest Management Plans or Silviculture Strategies.

### **Criteria and indicators**

The SFMP template presented in Part II of this document is based on criteria of sustainable forest management such as those established by the Canadian Council of Forest Ministers (CCFM) and/or the Montreal Process. These criteria and associated indicators provide a framework to monitor progress towards sustainable forest management.

For example, the CCFM criteria are broad categories of conditions or processes:

1. Conservation of biological diversity.
2. Maintenance and enhancement of forest ecosystem condition and productivity.
3. Conservation of soil and water resources.
4. Forest ecosystem contribution to global ecological cycles.
5. Multiple benefits to society.
6. Accepting society's responsibility for sustainable development.

Each criterion should have one or more goals specific to the defined forest area supported by one or more indicators. A goal is a broad statement describing a desired future state or

condition. An indicator is a quantitative or qualitative variable used to measure or describe an aspect of the criterion related to the achievement of the goal. A target is used for each indicator to specify the desired state or ranges for the indicator. Different certification schemes utilize different terms.

Example:

<b>Criterion</b>	<b>Goal</b>	<b>Indicator</b>	<b>Target</b>
Conservation of biological diversity	<input type="checkbox"/> Maintain representative seral stages across the landscape	<input type="checkbox"/> % in 0-20 year age class by landscape unit	<input type="checkbox"/> Less than 30% of a landscape unit

Each indicator should be related to an initial target. The target may already have been achieved or may have to be attained through a process such as adaptive management.

### **Ongoing improvements**

The following three points describe the desirable characteristics of an SFMP:

1. Address all of the criteria, indicating how each will be achieved over the longer term. Provide details of the desired future forest condition within the defined forest area.
2. Demonstrate via spatially explicit modelling, at relevant scales, the evolution of the current forest condition to the desired future forest condition. This modelling is done over a long time period, preferably 100-200 years. Provide details of the targets to be achieved, how it will be determined whether the targets have been achieved, and what steps will be taken when there is significant divergence between the target and the measured indicator.
3. Indicate knowledge gaps within the defined forest area, and develop a plan for how these gaps will be addressed.

It is recognized that not all of these characteristics will be attainable by licensees in the first few years of developing SFMPs. As with any new procedure, it is anticipated that the quality of SFMPs will improve over time. As licensees gain experience with the process, the thoroughness and value of SFMPs will increase.

### **Links to other initiatives**

#### **Sustainable Resource Management Plans and Other Strategic Plans**

An SFMP must be consistent with legally established land-use objectives (higher level plans). Strategic landscape-level objectives may be formulated under an SFMP in partnership with Ministry of Sustainable Resource Management. These objectives may be incorporated into a Sustainable Resource Management Plan and be given legal effect to support the delivery of the Results Based Code. SFMPs can also address or incorporate the objectives of other resource plans that are not legally binding (see Figure 1).

## **Results Based Code**

The Results Based Code requires licensees to provide evidence that their Resource Development Permit meets certain criteria. An SFMP can be used to provide evidentiary information to support Resource Development Permits.

## **Forest Investment Account**

Development of an SFMP, or components of an SFMP, may qualify as an activity that can be funded under the Forest Investment Account (FIA) in 2002/03 (see <http://www.for.gov.bc.ca/cpp/fia/index.htm>). Commencing April 2003, a licensee will need to be a signatory to an existing SFMP or be actively participating in the development of an SFMP in order to receive FIA funding.

## **Forest Management Certification**

The criteria and indicators terminology used in this document is compatible with several forest certification schemes. Check with individual certification schemes to determine requirements in addition to those listed for SFMPs. The British Columbia government acknowledges the importance of forest management certification for market access, but does not endorse any particular certification scheme. The British Columbia government is committed to working with industry, non-governmental interests, customers, and others to ensure that practical solutions on certification are developed that support and demonstrate sustainable forest management practices and are accepted in international markets.

## **Timber Supply Analysis**

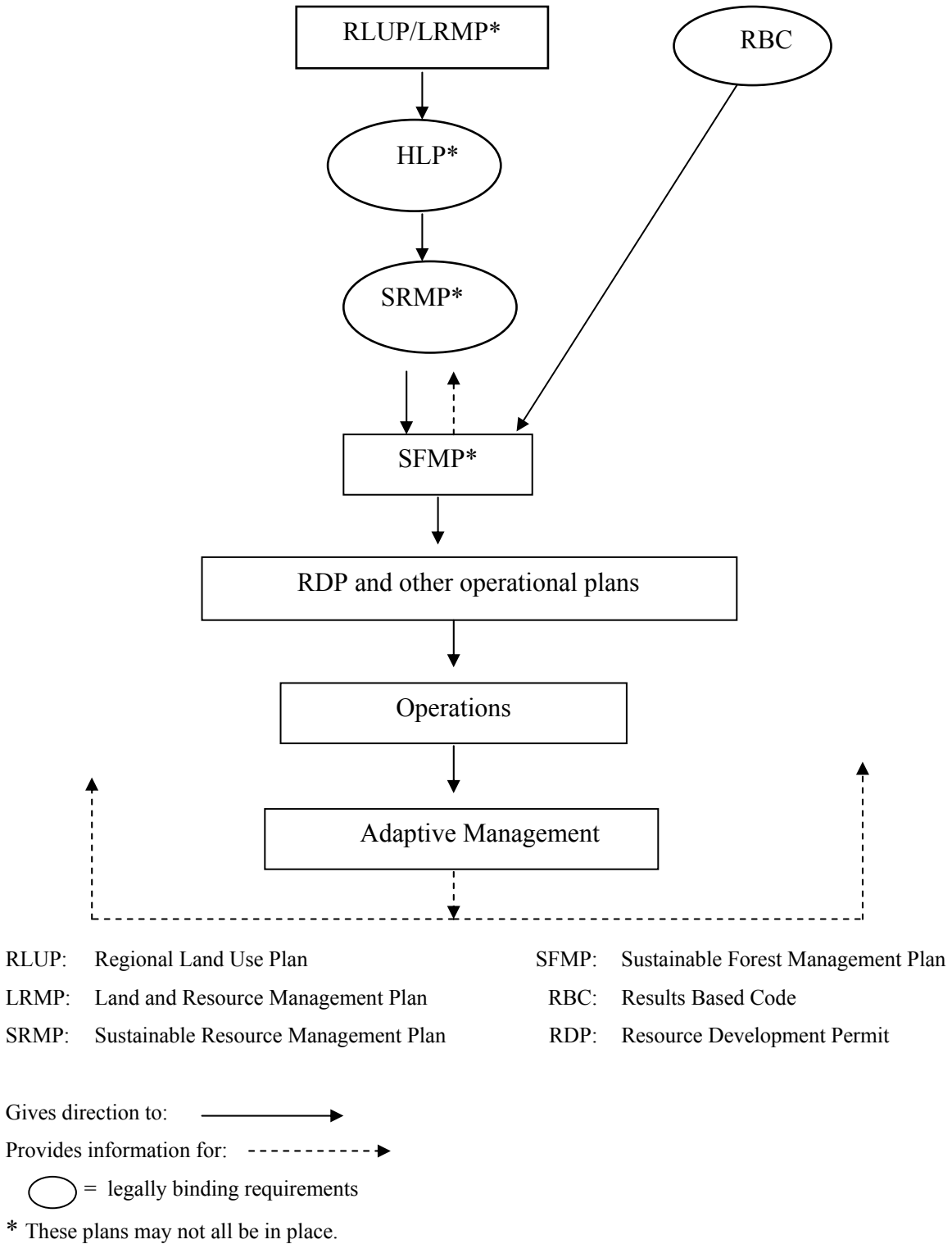
A licensee or group of licensees within a Tree Farm Licence or Timber Supply Area may decide to link the requirements for a timber supply analysis with the development of an SFMP. If the timber supply analysis is already complete and current, the results can be incorporated into the SFMP.

## **Other Planning Documents**

Planning documents, such as Silviculture Strategies or Pest Management Plans, can be incorporated or referred to in an SFMP. Such plans may provide part of the rationale for the selection of certain indicators and targets.

See Appendix 1 for additional information relating to the above initiatives.

**Figure 1: The relationship between SFMPs and other planning initiatives.**





## **Part II: SFMP Template**

The following sections describe suggested headings and content for Forest Investment Account investment planning purposes.

### **Introduction**

The introduction provides general background information to help understand the details of the SFMP. This may include:

- a brief history of the licensee or licensees involved;
- a detailed description of the area;
- a summary of forest management and stewardship policies;
- strategic objectives;
- links to operational planning;
- a commitment to continual improvement; and
- other background information.

### **Purpose**

This section describes the purpose of the SFMP, including any links with other plans or initiatives.

For example, the SFMP:

- serves as the principal vehicle for transferring the licensee's commitment to sustainable forest management into on-the-ground practices;
- provides necessary evidentiary information in support of Results Based Code Resource Development Permits; and
- provides investment rationale for Forest Investment Account expenditures planned for the defined forest area.

### **Responsible parties**

More than one company and/or organization may prepare an SFMP. For example, the plan may apply to a Timber Supply Area with multiple forest licence holders. If more than one licensee has developed the SFMP, all licensees should be identified by name and address.

### **Defined forest area**

The defined forest area is a specified area of forest, including land, water and range, to which the SFMP is applied. The defined forest area may or may not consist of a contiguous block or parcel. A defined forest area is generally the area for which an AAC is determined (i.e., Tree Farm Licence or Timber Supply Area).

The SFMP should include a map of the defined forest area. A brief history of the area may also be presented, outlining the reason behind any changing areas, ownership, or land-use designation.

## **Strategic plans applying to the defined forest area**

Any strategic plans that apply to the defined forest area should be listed. A distinction should be made between legally binding objectives and policy plans. Where legal objectives in the defined forest area have been established, the SFMP must be consistent with those objectives.

Policy plans contain policy direction that should be considered. In a number of areas, these plans have been used to guide operations, but the policy direction is non-binding. An example of a policy plan is a land and resource management plan (LRMP) approved in principle. These plans should be consulted and incorporated, where relevant, when developing the SFMP. In some cases, the SFMP will be able to build on and refine the management intent already developed through these resource plans.

Where strategic land use objectives (legal or policy) are insufficient or do not exist, strategic landscape level objectives can be developed by the SFMP planning team. These strategic objectives may be given legal force (via the Ministry of Sustainable Resource Management through a Sustainable Resource Management Plan) for the purpose of supporting the Results Based Code. Such a partnership with the Ministry of Sustainable Resource Management will ensure certainty regarding land use issues and cost effective investment on operational activities.

See Appendix 2 for a discussion of strategic landscape-level objectives.

## **Public and First Nations participation**

A public participation process may help to refine the SFMP contents to meet the particular needs of the defined forest area. A public advisory group may be key in defining the goals, indicators and targets that are important for a defined forest area. Early public and First Nations participation will usually be vital to the success of an SFMP.

### **Public Participation**

An SFMP should describe the public participation strategy used for developing and implementing the SFMP.

There are a variety of methods that can be employed for public participation. One approach is to form a public advisory group.

A licensee or group of licensees can build on the results of existing or former public participation processes. Licensees can further refine and/or expand these results by involving a local group of interested and affected parties on an ongoing basis.

### **First Nations Participation**

An SFMP should describe the involvement, and opportunities for involvement, for First Nations representatives, if applicable.

First Nations who have an interest in or are affected by forest management on a defined forest area should be given an opportunity to contribute their special knowledge to the process of setting goals, indicators and targets.

A separate process may be used for First Nations participation. Alternatively, First Nations representatives could participate as committee members on a public advisory group.

## Goals, indicators and targets

While there is some uncertainty over the precise definition of sustainable forest management, there is broad agreement that it can be identified through the achievement of a number of general criteria. These include, but are not restricted to, criteria such as those established by the Canadian Council of Forest Ministers (CCFM) and the Montreal Process.

An SFMP can be structured using criteria such as those from the CCFM or the Montreal Process. For each criterion, develop goals, indicators and targets specific to the defined forest area. Indicators and related targets must be scientifically valid, as well as socially acceptable.

In addition, the SFMP should document the following:

- rationale for indicators and targets;
- current state of indicators;
- forecasting and expected trends of indicators;
- monitoring and evaluation procedures; and
- implementation plans.

### Goals

A goal is a broad statement describing a defined forest area's desired future state or condition. There may be several goals for each criterion.

Example Goal for the Criterion- Conservation of Biological Diversity

Goal	Maintain representative seral stages across the landscape.
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Discussion of example goal: The conservation of biological diversity is one of the criteria for sustainable forest management identified by the Canadian Council of Forest Ministers, the Montreal Process, and other groups. The above goal is based on the principles of the coarse-filter approach to conservation of forest biodiversity, namely, that the simulation of natural processes over the landscape will help conserve the suite of species dependent on those processes.

### Indicators

An indicator is a variable that measures the state or condition of a goal for a defined forest area.

Selecting indicators involves defining what is to be measured and why it is important. Indicators pertaining directly to forest conditions are preferred over those pertaining to sustainable forest management activities.

Good indicators typically have some or all of the following traits:

- Measurable – it is difficult to set a target for indicators that are not practical to measure.
- Can be forecast – it is difficult to manage for a goal if future targets cannot be predicted with reasonable accuracy.
- Relevant – the indicator needs to clearly represent a condition or trend of the associated goal.
- Understandable – the SFMP will be a public document, and indicators need to be meaningful, clear and easy to understand.
- Valid – the indicator should be consistent with scientific understanding of the value being described, objective, easily documented, comparable and reproducible.
- Cost-effective

Example:

Indicator	Percentage in 0–20 year age class by landscape unit.
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Discussion of example indicator: This indicator is a direct measure of the goal (maintain representative seral stages across the landscape). It is one of several indicators required for the goal. Different indicators may be more suitable for older age classes.

See Appendix 3 for other example indicators.

### **Targets**

A target is a specific statement describing a desired future state or condition of an indicator. Targets should be clearly defined, time-limited, and quantified.

Example:

Target	Less than 30% of a landscape unit.
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Discussion of example target: The target is easily measured. For an ecological indicator, a base case of the natural range of variability is fundamental to choosing a logical target.

### **Rationale for Indicators and Targets**

Describe the rationale for choosing an indicator and target. Supporting evidence in the selection of both the indicator and the target should be described. This may relate to a variety of factors, such as:

- advice received during public consultation;
- guidance from policy;
- planning for the defined forest area, such as contained in a Silviculture Strategy or Pest Management Plan; and
- operational experience or research.

### **Current State of Indicators**

Quantify the current state of the indicator. This may include a description of the historical causes of the current state.

### **Forecasting and Expected Trends of Indicators**

The approach used to make indicator forecasts can range from simple equations to scenario building using complex computer models. Whatever approach is taken, the forecasts will need an accompanying explanation of the analytical techniques used to generate them. Show the expected trend as a table or graph.

### **Monitoring and Evaluation Procedures**

Describe monitoring and evaluation procedures for indicators. Monitoring tracks indicators over time and space, and is an essential part of adaptive management. Adaptive management allows the continual improvement of practices through a rigorous approach of monitoring, assessment and adaptation.

Data gathered during monitoring are used to:

1. determine how practices affect the indicator, and if the practices, indicators or targets need to be adjusted or changed; and
2. improve the forecasting models for use in the next round of sustainable forest management planning.

### **Implementation Plans**

Describe how the operational practices necessary for implementation of the SFMP will be put into action. This may include a reference to operational plans that will be prepared in support of the design and development of an implementation schedule for the SFMP.

Describe the means of implementing continual improvement using adaptive management. This may include a summary of the current level of implementation and/or a specified timeline to demonstrate the progress towards achieving the target established for an indicator.

# Appendix 1: Additional Sources of Information

## Criteria and Indicators

Canadian Council of Forest Ministers Criteria and Indicators:

[http://www.ccfm.org/pi/4\\_e.html](http://www.ccfm.org/pi/4_e.html)

Montreal Process Criteria and Indicators:

[http://www.mpci.org/meetings/santiago/santiago1\\_e.html](http://www.mpci.org/meetings/santiago/santiago1_e.html)

## Certification

Ministry of Forests Certification homepage. Includes overviews of five certification systems and a status report on BC certification initiatives.

<http://www.for.gov.bc.ca/het/certification/>

## Monitoring and Evaluation

Ministry of Forests Adaptive Management homepage.

<http://www.for.gov.bc.ca/hfp/amhome/amhome.htm>

## Forest Investment Account

Overview of the Forest Investment Account. Includes acceptable activities for the land-based program.

<http://www.for.gov.bc.ca/cpp/fia/index.htm>

## Silviculture Strategy

This site contains analyses reports for timber quantity, quality and habitat supply for individual management units (TFLs/TSAs). Also included are special initiatives examining how silviculture may be used to enhance and maintain habitat supply.

<http://www.for.gov.bc.ca/hfp/silstrat/index.htm>

## Integrated Pest Management Plan

A guide for the development of a Pest Management Plan for forest vegetation management.

<http://wlapwww.gov.bc.ca/vir/pp/ipmweb/pmp/pmp.htm>

## **Results Based FPC Pilot Projects**

Contains links to descriptions of pilot projects, including regulations showing content requirement for Forest Stewardship Plans.

<http://www.for.gov.bc.ca/hfp/rbpilot/>

## **Examples**

### **Stillwater Timberlands Pilot Project**

Contains a copy of the Forest Stewardship Plan for the Stillwater Pilot.

<http://www.stillwaterpilot.ca/>

### **Western Forest Products Sustainable Forest Management Plan TFL 6**

<http://www.westernforest.com/fstew/tfl6.html>

### **Western Forest Products Sustainable Forest Management Plan TFL 19**

<http://www.westernforest.com/fstew/tfl19.html>

### **Canfor Certification Information**

Including SFMP for TFL 37

<http://www.canfor.ca/4520.asp>

### **Kamloops TSA Certification**

Including SFMP for Kamloops TSA

<http://www.lrmv.gov.bc.ca/kamloops/TSAcertification.htm>

## Appendix 2: Strategic Landscape-level Objectives

### Introduction

The development of strategic landscape-level objectives in co-operation with the Ministry of Sustainable Forest Management (MSRM) should precede, or be done concurrently with, the preparation of an SFMP. Where strategic landscape-level objectives are developed through SFM planning, MSRM will add these objectives to a Sustainable Resource Management Plan (SRMP) for the area. MSRM may also give these objectives legal effect to support the delivery of the Results Based Code. However, it is not necessary for strategic landscape-level objectives to be given legal effect before the SFMP is completed. Please see the following website for a full description of strategic landscape-level planning using SRMPs: <http://www.gov.bc.ca/srm/>

### Certification terminology versus strategic planning language

This document is structured using the criterion and indicators process and terminology that is common to several forest certification systems. The criterion and indicators framework and terminology differ from that used in strategic land-use planning. However, indicators and targets can be formulated that are readily converted into the necessary legal language for strategic land-use objectives. It is important to note which indicators and targets will need to be converted into strategic landscape-level objectives and to do so in conjunction with the SFMP planning team and MSRM staff.

### Comparison

An example of a strategic landscape-level objective and strategy suitable for a SRMP is presented below:

SRMP Objective – old growth

Objective:	Strategy:
Maintain old growth forest attributes throughout each rotation in the old growth management areas (OGMAs), which are hereby established as shown on map X.	Commercial harvesting will not normally be permitted in OGMAs.
	Within OGMAs, these forest practices will be permitted: cone gathering, tree topping, fire suppression.
	Allow natural processes of insect feeding or disease to occur within areas inside OGMAs unless infestations or infections threaten to spread into areas outside OGMAs. Aim at retaining structural features of old growth where intervention is required.
	Avoid road construction within OGMAs. Main haul roads should not be permitted in OGMAs unless no other reasonable and cost effective options exist. When secondary roads have been constructed within OGMAs, road deactivation should occur once operational activities are completed.



In the criteria and indicators terminology of an SFMP, the objective above would represent the goal, indicator and target. The strategy as written above could be the same for both the SRMP and SFMP.

<b>Goal:</b>	Maintain old growth forest attributes.
<b>Indicator:</b>	Area of old growth forest retained throughout forecast period.
<b>Target:</b>	Maintain 600 hectares of old growth forest in OGMA's as shown on map X.
<p><b>Current Practices and Strategy</b> (this may be a component of a broader landscape-level biodiversity strategy): Commercial harvesting will not normally be permitted in OGMA's. Within OGMA's, these forest practices will be permitted: cone gathering, tree topping, fire suppression.</p> <p>Allow natural processes of insect feeding or disease to occur within areas inside OGMA's unless infestations or infections threaten to spread into areas outside OGMA's. Aim at retaining structural features of old growth where intervention is required.</p> <p>Avoid road construction within OGMA's. Main haul roads should not be permitted in OGMA's unless no other reasonable and cost effective options exist. When secondary roads have been constructed within OGMA's, road deactivation should occur once operational activities are completed.</p>	

### MSRM's role in SFMP development

SFMPs will encounter one of three situations with regard to strategic landscape-level objectives.

1. Legally established land-use objectives are in place (HLPs).
  - SFMP must show its consistency with these binding objectives.
2. Strategic policy plan exists; i.e., LRMP objectives.
  - SFMP will work with the information contained in the policy plan and refine as necessary to develop appropriate strategic landscape-level objectives.
3. No strategic land-use objectives exist.
  - SFMP develops landscape level objectives.

This might work in the following way:

- The SFMP requires assistance with regard to strategic land-use direction.
- MSRM assists with the refinement or development of strategic landscape-level objectives, along with all other partners.
- Concurrently, the SFMP determines appropriate targets and indicators as per certification language and appropriate legal objectives.

## Appendix 3: Example Indicators

Table 1: Criteria and Example Indicators

Criterion from CCFM	Example Indicators	Comments
Conservation of Biological Diversity	<ul style="list-style-type: none"> <li>▪ Seral stage distribution</li>   <li>▪ % WT retention in harvested area</li>   <li>• Number of forest-associated species by at-risk category that are declining, increasing or stable</li> </ul>	<p>Good surrogate for ecosystem diversity that is fairly easily measured. Optimum distribution (i.e., target conditions) is poorly understood.</p> <p>Easy to measure, but difficult to determine effectiveness in relation to biodiversity. Clear protocols required in the event of windthrow.</p> <p>This indicator is measurable (for most species), clearly related to the criterion, and bounded by clear definitions (e.g., B.C.'s red and blue lists).</p>
Maintenance and Enhancement of Forest Ecosystem Condition and Productivity	<ul style="list-style-type: none"> <li>▪ % of cutblocks achieving free growing within 12 years of harvest date</li> </ul>	Easily measured indicator.
Conservation of Soil and Water Resources	<ul style="list-style-type: none"> <li>▪ % of cutblocks covered by roads and landings</li> </ul>	Easily measured and relates to both soil and water conservation.
Forest Ecosystem Contributions to Global Ecological Cycles	<ul style="list-style-type: none"> <li>▪ hectares of NSR (current and backlog)</li> </ul>	Easily measured at local level. Full carbon modelling is better done at larger scales.

<p>Multiple Benefits to Society</p>	<ul style="list-style-type: none"> <li>▪ % of AAC harvested</li>   <li>▪ Number of kilometres of recreation trails managed</li> </ul>	<p>Broad indicator of reaching economic potential expected with a balance of environmental, social and economic considerations.</p> <p>This is a meaningful, easily measured indicator.</p>
<p>Accepting Society's Responsibility for Sustainable Development</p>	<ul style="list-style-type: none"> <li>▪ # of public involvement events and attendance</li>   <li>▪ Public satisfaction with decision-making process (e.g., via a survey )</li> </ul>	<p>Easily measured indicator of effort and engagement. Says nothing about the engagement and satisfaction of the public.</p> <p>Good indicator, as it provides an assessment of the effectiveness of public involvement in the decision-making process.</p>

## **Appendix 4: Listing of Revisions**

<b>Version</b>	<b>Date</b>	<b>Change</b>
1	June 28, 2002	Initial version of document posted on the web.
2	July 03, 2002	Kamloops TSA SFMP example added to Appendix 1.