



**Tolko Industries Ltd**  
**Thompson Nicola Woodlands**  
**Heffley Creek**  
**Sustainable Forest Management Plan**

**January 2007**





**Thompson Nicola Woodlands**  
**Heffley Creek**  
**Sustainable Forest Management Plan**  
**2007**

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Date \_\_\_\_\_

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## **Vision Statement:**

*The Sustainable Forest Management Plan will foster forest management practices - based on a balance of science, professional judgment and local and First Nations input - that sustain the long-term health and productivity of forest ecosystems while contributing to a strong economy and thriving communities throughout the Kamloops Timber Supply Area.(from the Kamloops TSA SFM Plan).*

## Executive Summary

Forest tenure holders in the Kamloops Timber Supply Area (TSA), including Tolko Industries Ltd., Thompson Nicola (TN) Woodlands, Heffley Creek, have developed the Kamloops Sustainable Forest Management (SFM) Plan based on the CSA certification system. The Plan provides management direction to all licensed forest lands in the TSA, Tree Farm Licenses (TFLs) 35 and 18 and subscribing Woodlot Licensees. This plan has been agreed upon by the forest tenure holders. The SFM Plan will allow forestry operations throughout the TSA to meet the public participation requirements of this national certification standard.

Tolko and other forest licensees in the Kamloops TSA have been working with the public to develop responsible forest management plans for over 20 years. These planning processes include development of strategic and operational plans, analyses, setting of standards, monitoring and public review. Tolko Industries Ltd. prepares a Forest Stewardship Plan that incorporates the direction provided through these various planning processes. Standards and operating plans are continuously updated as new information comes forward. The SFM Plan is an example of the commitment of Tolko Industries Ltd., and their fellow licensees, to adapt their management practices in response to changes in society's values.

The SFM Plan will serve as a “roadmap” to current and long-term management in the TSA, setting performance targets and management strategies that are reflective of the ecological and social values across the TSA. It will be consistent with the Kamloops Land and Resource Management Plan, which was developed from 1992 - 1995 by a cross-section of local stakeholders, interests groups and members of the public.

***Tolko, Thompson Nicola Woodlands, Heffley Creek is committed to the Kamloops Timber Supply Area (TSA) SFM Plan. Tolko is aligned to this plan and any changes that occur as a result of the TSA SFM process will be***

More information on Tolko Industries Ltd., Thompson Nicola Woodlands, Heffley Creek can be found at [Tolko.com](http://Tolko.com)



# 1.0 Introduction and Overview

## **Kamloops TSA SFM Plan**

In recent years there has been an increasing demand worldwide for certified wood products. This has led to the development of a number of certification systems to provide assurance to consumers that timber has been produced using environmentally and socially responsible forest practices.

The Canadian Standards Association (CSA) Sustainable Forest Management; Requirements and Guidance is one of a number of certification systems currently being used in British Columbia. The CSA system sets performance objectives and targets over a defined forest area to reflect local and regional interests. The process of CSA certification includes advisory committees composed of a range of public, First Nations, and stakeholder interests.

Forest tenure holders in the Kamloops Timber Supply Area (TSA), of which Tolko Industries Ltd., Thompson Nicola (TN) Woodlands, Heffley Creek is a member, have developed the Kamloops TSA Sustainable Forest Management (SFM) Plan based on the CSA certification system. The Plan provides management direction to all licensed forest lands in the TSA, Tree Farm Licenses (TFLs) 18 and 35 and subscribing Woodlot Licensees. This plan has been agreed upon by the forest tenure holders. The SFM Plan will allow forestry operations throughout the TSA to meet the public participation requirements of this national certification standard.

The SFM Plan serves as a “roadmap” to current and long-term management in the TSA, setting performance targets and management strategies that are reflective of the ecological and social values across the TSA. It is consistent with the Kamloops Land and Resource Management Plan, which was developed from 1992 - 1995 by a cross-section of local stakeholders, interests groups and members of the public.

Tolko and other forest licensees in the Kamloops TSA have been working with the public to develop responsible forest management plans for over 20 years. These planning processes include development of strategic and operational plans, analyses, setting of standards, monitoring and public review. Tolko Industries Ltd. prepares a Forest Stewardship Plan that incorporates the direction provided through these various planning processes. Standards and operating plans are continuously updated as new information comes forward. The SFM Plan is an example of the commitment of Tolko Industries Ltd., and their fellow licensees, to adapt their management practices in response to changes in society’s values.

The values, objectives, indicators, targets, and guiding principles described in this document will be adhered to by Tolko Industries Ltd., and the other licensees in the TSA, to achieve sustainable forest management for the TSA. This is an evolving document that is reviewed and revised on an annual basis with the SFM Advisory Group to reflect changes in forest condition and local community values.

## **Tolko Thompson Nicola Woodlands, Heffley Creek SFM Plan**

Tolko Industries Ltd. Sustainable Forest Management Plan outlines the current and long term SFM performance objectives and management strategies that relate to Tolko Industries Ltd.’s

Defined Forest Area (DFA). Tolko, TN Woodlands, Heffley Creek is committed to the Kamloops Timber Supply Area (TSA) SFM Plan. Tolko is aligned to the TSA plan and any changes that occur as a result of the TSA SFM process will be incorporated into the Tolko TN Woodlands, Heffley Creek SFM Plan.

More information about the Kamloops TSA certification process, Sustainable Forest Management Planning, meeting summaries, annual reporting and maps can be obtained at the Kamloops TSA Certification Website (<http://kamloopssustainableforestry.ca/>). Information regarding Tolko's sustainability initiatives and the TN Woodlands, Heffley Creek SFM Plan can be found at <http://www.tolko.com/sustainability/div/heffley.php>.

### **Tolko's Environmental Policy**

Tolko is committed to the well-being of future generations through responsible environmental performance. This is a key value of the Company. Our ability to operate the business, satisfy customers and other stakeholders and build sustainable economic success is increasingly dependent on our environmental performance. Our commitment applies to all aspects of our business.

Tolko's Management Team, drawing on the input of employees and stakeholders, provides strategic direction and resources to help the Company honour this policy. This includes ensuring that employees receive the education and training necessary for them to carry out their work in an environmentally responsible manner. Employees will actively participate in environmental management and challenge operating principles they believe can be improved.

Activities that support this policy are:

- Complying with environmental laws and regulations and other requirements to which we commit;
- Continually improving our environmental performance;
- Integrating the requirements of environmental laws and regulations and our other commitments into business planning and decision making;
- Managing forest land in a professional and sustainable manner consistent with Tolko's Forest Management Principles;
- Managing operations to minimize pollution;
- Evaluating our environmental performance through internal and external audits, reviews and benchmarking;
- Communicating environmental, social and economic performance with our employees, the public and other stakeholders; and
- Encouraging and recognizing employees for their contribution towards improving our environmental performance.

Tolko's performance will be reviewed and reported annually.

**Issue Date:** January 1998

**Amendment Date:** April 2001

## **Tolko's Forest Management Principles**

Forest lands managed by Tolko make an important contribution to the quality of life for many communities by providing a wide range of environmental, social and economic benefits.

Tolko is committed to professional and sustainable forest management. Our ability to provide raw materials to our manufacturing facilities depends on managing forest resources and respecting all forest values.

Tolko's Management Team develops strategic direction and provides resources to the Woodlands departments. The Woodlands group, drawing on the input from our employees, stakeholders, aboriginals and members of the public, will develop professional resource plans that demonstrate an innovative and sensitive approach to forest land management. Tolko's activities will be ecologically suitable, economically feasible and socially acceptable.

Activities that support these principles are:

- Maintaining or improving the health and productivity of forest ecosystems and biological diversity;
- Actively promoting stakeholder and public participation through open communication;
- Respecting aboriginal and treaty rights;
- Providing for safeguards to the health and safety of employees, contractors and the public in our Woodlands operations;
- Complying with forest management legislation and policies;
- Evaluating our forest management performance through internal and external audits, reviews and benchmarking; and,
- Increasing our knowledge and expertise through advances in science and the implementation of adaptive management.

**Established June 1999 – Amended May 2004**

## **Aboriginal Policy**

Tolko is committed to work with aboriginal communities and individuals on the basis of mutual understanding, respect and trust, as well as recognition of and sensitivity to the different cultural values and traditions of each community in which Tolko operates.

The principles that guide our business are:

- Ensure effective communication on forest management activities that involve aboriginal areas of interest.
- Provide employment and contract opportunities to aboriginal people consistent with Tolko's "Equal Employment Opportunity" policy.
- Conduct our business in a manner that will be supportive of ventures that make sound business sense and are operated for the mutual benefit of all parties.
- Establish and maintain a participative process to identify opportunities and address or resolve conflicts that may arise.

## 2.0 Guiding Principles

During the development of the SFM Plan Tolko Industries Ltd., and the rest of the SFM Advisory Group identified a number of principles to guide the implementation of the Plan. These guiding principles form some of the core principles of management and will be adhered to by Tolko and the licensees.

- Recognizing that First Nations are not just another stakeholder, best efforts will be made to respect and accommodate the unique needs and values of Aboriginal Peoples in forest management decisions, plans and practices. This includes recognition and respect for Aboriginal title, rights and cultural values and the wider incorporation of Traditional Knowledge.
- All suggestions and concerns from the public related to non-timber resources will be included in the Forest Stewardship Plan document and used to guide Tolko Industries Ltd., in the development of their plans.
- Tolko will strive to create a situation of mutual respect with other Crown license holders (i.e., grazing, trappers, mining) with a commitment to communicate in order to maintain the viability of resources for all parties.
- Research and information needs and priorities related to the achievement of sustainable forestry (e.g., research and inventory) will be re-evaluated yearly and Tolko will forward these priorities to appropriate funding agencies.

## 3.0 The Plan Area

### DFA Description

The DFA is wholly within the Kamloops Timber Supply Area (TSA) which is located within the Kamloops Forest Region. Tolko's DFA under this plan is the operating area that has been allocated for Forest Licenses A18686 and A18689. A map depicting this area is provided in Appendix 9. Excluding woodlots, the total crown forest land base of this license is 174,000 ha. The available timber harvesting landbase after reductions for non forest land, streams, wetlands and lakes, parks and protected areas, non-contributing forest, and OGMAs, is 88,412 ha, or 51 percent of the DFA. With the current annual cut of 250,923 m<sup>3</sup> there is approximately 49 years of mature timber remaining within FLs A18686 and A18689.

The DFA has undergone substantial changes when compared with previous years. In late 2004, Tolko acquired Riverside Forest Products Limited. This acquisition resulted in addition of the legacy Riverside operating areas to the DFA in 2005. Also, the provincial government implementation of Bill 28 has resulted in takeback of licensee operating areas. These areas have been removed from the DFA.

The DFA has a wide variety of climates, soils, vegetation and topography and overlaps portions the Northern Thompson Upland, Thompson Basin, Shuswap Highland, and the southern tip of the

Cariboo Plateau Ecosctions. Biogeoclimatic zones within these ecosctions include Ponderosa Pine, Interior Douglas-fir, Montane Spruce, Interior Cedar Hemlock, Sub-boreal Spruce, Engelmann Spruce Subalpine Fir and Alpine Tundra. Average annual precipitation ranges from 335 mm in the dry Bunchgrass to 1177 mm in the cold, wet Engelmann Spruce Subalpine Fir zone.

Refer to Appendix 6 for a summary of the Forest License land base and forest cover. In Appendix 7 there is a detailed outline of how the AAC is determined in BC and how Tolko's sustainability is accounted for in this calculation.

### **Overlapping Tenures and Responsibilities**

There are overlapping responsibilities within the DFA including a Pulpwood Agreement, and short term cedar and hemlock NRFLs. There has also been a history of trading operating areas between major licensees in the DFA. Then, beginning with the 2003 fires, and subsequently with the mountain pine beetle epidemic, the Ministry of Forests and Range (MOFR) has awarded, and will be awarding, licences to salvage impacted volumes within Tolko's operating area. More recently, major licensees have been actively salvaging mountain pine beetle attacked stands on cutblocks that are within Tolko's DFA. With one exception, where areas have been traded away by Tolko, all forest management rights and obligations, including roads, are transferred to the new licensee. The exception is Free Growing obligations on blocks that had been harvested prior to the agreement being signed. Forest management activities associated with blocks that have outstanding Free Growing obligations are accounted for by Tolko when reporting against relevant indicators. Similarly, where operations have been or are carried out by other licensees in Tolko's operating area, the affected areas are excluded from Tolko's DFA, and obligations on these areas remain the responsibility of the other licensees. Forest management activities associated with these blocks are accounted for by the other licensees and the MOFR when reporting against relevant indicators.

This overlapping activity within Tolko's TN Woodlands, Heffley Creek DFA is contributing to the rate of conversion of the DFA from older to younger age classes.

### **Mountain Pine Beetle**

Mountain pine beetle (MPB) is severely impacting mature lodgepole pine stands in the southern part of the Kamloops TSA. The MPB is the most damaging insect attacking lodgepole pine forests in BC. These beetles exist naturally in mature lodgepole pine forests, at various population levels, depending on pine availability and weather conditions. They play an important role in the natural succession of these forests by attacking older or weakened trees, which are then replaced by younger, healthy forests. The beetle population levels in British Columbia's interior have been increasing steadily since 1994.

Eleven percent of the DFA area has mature lodgepole pine (PI) as the leading species. Another eleven percent has immature PI. Beetle susceptibility models would suggest that the majority of the mature PI stands in the DFA will have MPB populations within them in the next eight years. During 2004 and 2005, both the rate of spread and the attack intensity increased. The 2004 aerial overview surveys for the Kamloops TSA resulted in classifying about 124,401 ha as red attacked. This represented a 4.4 fold increase in area affected in the Kamloops TSA from 2003. Red-attacked trees are those that were attacked and killed in the previous year. In 2005, 336,705 hectares of the TSA were classified as red attack, 2.7 times the area covered in 2004. In 2006 red attacked area increased to 394,075 hectares. While the rate of spread slowed significantly, the intensity of attack within

affected stands increased substantially.

There is no indication the spread of the infestation will slow significantly without sufficiently cold weather to kill the developing beetle brood. Either temperatures reaching  $-30^{\circ}\text{C}$  in the early fall or late spring when the beetles are not fully in their “over-wintering state”, or sustained winter temperatures of less than  $-40^{\circ}\text{C}$ , are required to kill the brood. If the beetle is not stopped due to climatic conditions, populations will only collapse when they encounter a shortage of acceptable, mature pine. Of note, 30 year and older pine plantations are being impacted by MPB, particularly when adjacent to high beetle populations in the mature pine. In the fall of 2003 the Chief Forester of BC allocated a three million cubic meter uplift to the Kamloops TSA to help address the building problem.

Tolko, working closely with the Ministry of Forests and Range, and the forest industry, has been actively trying to control and manage the mountain pine beetle infestation in the TSA, and within Tolko’s DFA in particular. In an effort to maximize harvest of impacted stands within their DFA, Tolko has been identifying salvage harvest opportunities for other licence holders (FLs, NRFLs, SSSP). Tolko has co-operated with, and supported these other licensees’ planning and operations within the DFA.

Tolko was a proponent and an active participant in the 2007 updating of the 2006 Kamloops TSA Mountain Pine Beetle Strategy. The objectives and core outcomes of the strategy are:

- The extent of current infestations has been summarized; and future infestations have been estimated.
- Guidance has been developed to facilitate salvage planning.
  - Focus is managing for forest values, meeting public expectations and expediting salvage planning and operations.
  - Watershed/landscape level strategic and operational planning is emphasized.
  - Biodiversity and ecosystem functioning, and “hydrology – water – riparian” are primary areas where guidance is provided.
- TSA stands/areas are prioritized for salvage operations considering stand susceptibility, short and long term timber supply, other resource values and current attack severity.
- Salvage capacity is being allocated to the highest priorities.
- Information developed will support TSR AAC recommendations (maintain, extend, or increase current AAC uplift)
- Strategies have been developed to address two primary areas of concern regarding overlapping and multiple tenures:
  - Watershed level assessments and planning -- coordinating planning with multiple licensees.
  - Operational challenges with overlapping tenures.

As the impact to the SFM plan from the MPB are better understood, further refinements to this plan may be required.

## 4.0 The Planning Process

Refer to the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area.

## 5.0 Strategy Guiding the SFM Plan

Refer to the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area.

## 6.0 Values and Objectives

Tolko worked with the SFM Advisory Group, and the other licensees, to identify local values and objectives that address each of the criteria and associated elements prescribed by the CSA standard.

Indicators and associated targets have been developed to meet these local values and objectives. SFM Plan indicators and targets are described in Section 7. A summary table showing all criteria and elements and associated local values, objectives, and indicators is provided in Appendix 4 of the SFMP for the Kamloops TSA.

Refer to the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area to review values and objectives identified.

## 7.0 Indicators and Indicator Matrices

### Introduction

In an SFM Plan it is the indicators and targets that provide the performance measures that are to be met through on-the-ground forest management activities. Indicators and associated targets have been developed to meet the local values and objectives identified by the SFM Advisory Group. Tolko worked with the Advisory Group, and other licensees, in the development of the indicators, targets and supporting information.

Refer to the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area to review introductory information and the indicators and targets. For each indicator, “licensee(s)” responsibilities, procedures and actions are described. Tolko will adhere to these responsibilities, procedures and actions as part of their participation in the Kamloops TSA SFM Plan, and in carrying out their forest management activities to the CSA Standard within Tolko’s DFA.

### Monitoring and Reporting

Tolko Industries Ltd. will monitor the achievement of targets annually. Tolko, TN Woodlands, Heffley Creek will manage for the achievements of these targets using their EMS and other information systems which will outline the action plan, time frame for completion and responsibility. Appendix 3 of this plan describes responsibilities and procedures for monitoring and reporting performance and provides the reporting format. Management strategies provide further direction to the performance measures (indicators and targets) and will serve as a guide for Tolko Industries Ltd. in their annual monitoring activities.

### Management Strategies

Tolko is guided by their Corporate Values, Environmental Policy and Forest Management Principles

and is directed by the regulations, laws and policies established by the federal, provincial, and municipal governments. As well, the Kamloops LRMP guides forest management as a higher level plan. The KLRMP was developed with extensive public input. Public participation and input into forest operations continues to be a key feature of forest management planning in Tolko's License area within the Kamloops TSA.

Within the direction provided, Tolko manages their forest operations to provide high quality fiber for the Company's mills over the long term. At the same time, Tolko is making a significant effort to manage and balance the landscape for biological diversity, global cycles, soil, and water and to meet their social responsibilities.

The Kamloops TSA SFM plan process has served to further refine the information and concerns of the local public. Incorporating these concerns and ideas into Tolko's operation through the established performance measures and ongoing monitoring will ensure long term sustainability of the forest resource. Any indicators that are conducive to long term projections are noted in Section 7 of the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area.

### **Current Status of Indicators**

Establishing benchmarks and continual improvement of CSA performance measures will be accomplished through the annual review of the Sustainable Forest Management Plan and the independent auditor review. Current status of each indicator will be as reported and updated in annual SFM Plan performance reporting. To obtain current indicator information please contact Michael Bragg R.P.F. Tolko Industries Ltd., TN Woodlands, Heffley Creek at 250 578 2181. "Base Line For Priority Indicator" in the Indicator matrices provides the Indicator status at the time it was included in the SFMP.

## **8.0 Links to Other Planning Processes**

Refer to the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area.

# Glossary

## List of Acronyms

<b>Acronym</b>	<b>Meaning</b>	<b>Acronym</b>	<b>Meaning</b>
AAC	Allowable Annual Cut	ha	Hectares
AAC	Annual Allowable Cut	HLP	Higher Level Plan (i.e. KLRMP)
AOA	Archaeological Overview Assessment	ISO	International Standards Organization
AUM	Animal Unit Month	KLRMP	Kamloops Land and Resource Management Plan
BEC	Biogeoclimatic Ecosystem Classification	LU	Landscape Unit
CCFM	Canadian Council of Forest Ministers	MOFR	Ministry of Forests and Range
CSA	Canadian Standards Association	OGMA	Old Growth Management Area
CSA	Canadian Standards Association	SARA	Species at Risk Act
CWD	Coarse Woody Debris	SFM	Sustainable Forest Management
DFA	Defined Forest Area	SP	Site Plan
DFO	Department of Fisheries and Oceans	TFL	Tree Farm Licence
EMS	Environmental Management System	THLB	Timber Harvesting Land Base
FDP	Forest Development Plan	TOR	Terms of Reference
FL	Forest Licence	TSA	Timber Supply Area
FPC	Forest Practices Code	TSA	Timber Supply Area
FPCBCA	Forest Practices Code of BC Act	TSR	Timber Supply Review
FPPR	Forest Planning and Practices Regulation	UN	United Nations
FRPA	Forest and Range Practices Act	WT	Wildlife Tree
FSP	Forest Stewardship Plan	WTP	Wildlife Tree Patch
GPS	Global Positioning System		

## Glossary of Terms

The following definitions were taken from the CAN/CSA-Z809 02, the *Forest Practices Code of British Columbia Act*, the Ministry of Forests and Range Glossary of Resource Planning Terms (April, 1996) and from discussions with the SFM Advisory Group.

**Aboriginal Rights:** are recognized and affirmed by *Sec. 35(1) of the Constitution Act, 1982*. Aboriginal rights involve practices that were integral to the aboriginal society before contact. For example, Aboriginal rights may include (but are not limited to) fishing, hunting, gathering, trapping, and the use of land and resources for social, medicinal, spiritual and ceremonial purposes (*Sparrow Decision, Guerin Decision, Calder Decision, Jack Decision*). Generally the priority set in the Courts is conservation first, aboriginal rights to carry on an activity and/or practice next. (SFM Advisory Group)

**Aboriginal Title:** (*Delgamuukw Decision*): is an Aboriginal right recognized and affirmed in Section 35(1) of the *Constitution Act, 1982*. Aboriginal title is right to the land itself and encompasses the right to exclusive use and occupation of the land held pursuant to that title for a variety of purposes, which need not be aspects of those aboriginal practices, customs and traditions which are integral to distinctive aboriginal cultures (Para 177). Aboriginal title also encompasses within it a right to choose to what ends a piece of land can be put (Para 168). (SFM Advisory Group)

**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. (CAN/CSA-Z809-02)

**Biological Diversity:** means 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 (UN Convention on Biological Diversity).

**Cultural and spiritual resources and values:** To assist readers and users of the plan in understanding the nature of resources and values, the following examples are provided. It should be understood that there are many more cultural and spiritual resources than these few examples. (SFM Advisory Group)

	Resource	Value
<b>Cultural</b>	<ul style="list-style-type: none"><li>▪ Thompson River salmon</li><li>▪ Deer</li><li>▪ Berries</li></ul>	<ul style="list-style-type: none"><li>▪ Fishing</li><li>▪ Hunting</li><li>▪ Gathering</li></ul>
<b>Spiritual</b>	<ul style="list-style-type: none"><li>▪ Sacred medicinal plants</li><li>▪ Spiritual site</li></ul>	<ul style="list-style-type: none"><li>▪ Spiritual medicines (herbs/weeds)</li><li>▪ Vision quest</li></ul>

**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. (CAN/CSA-Z809-02)

**Forest resources:** all resources and values associated with forests and range including, without limitation, timber, water, wildlife, fisheries, recreation, tourism, botanical forest products, forage, and biological diversity. (*Forest Practices Code of British Columbia Act*)

**Indicator:** a variable that measures or describes the state or condition of a value (see Figure 5 of Standard). (CAN/CSA-Z809-02)

**Licensee SFM Plan:** An SFM plan specific to the DFA for a licensee seeking or having acquired CSA Z09 certification.

**Known information:** a feature, objective or other thing that is contained in a higher level plan or is otherwise made available by a district manager or designated environment official at least four months before the Licensee plan is submitted for approval. (*Forest Practices Code of British Columbia Act*)

**Objective:** a broad statement describing a desired future state or condition of a value (see Figure 5 of Standard). (CAN/CSA-Z809-02)

**Old growth management area:** means an area that is subject to old growth management objectives established under section 3 [resource management zones and objectives] or 4 [landscape units and objectives] of the Forest Practices Code of British Columbia Act; (Forest Planning and Practices Regulation)

**Plans:** There are a variety of plans that apply to forest management including the following.

**Regional and subregional plans** – apply to large areas of the Crown land base (i.e. 500,000 to 5 million hectares). These plans establish direction for land use in the form of general resource management objectives that are applied consistently across the plan area and area specific resource management zones that provide objectives for a defined portion of the plan area.

**Sustainable resource management plans** – translate broad ‘strategic’ land use plans (i.e., regional and sub-regional plans) into more specific and tangible resource management direction that is needed for operational planning and day-to-day resource management decisions at a landscape or watershed level. Sustainable resource management plans define resource objectives in precise terms that are measurable, geographically specific, and clearly communicate the intended resource integration or trade-offs.

**Forest stewardship plans** – Forest stewardship plans describe the intended results a licensee commits to achieving, or the strategies that the licensee will use, in relation to the resource management objectives set by Government, the Forest and Range Practices Act or regulation.

**Site plans** – are required for any cutblocks or roads prior to harvesting on the cutblock or harvesting in relation to the road construction. A site plan must identify the approximate location of cutblocks and roads, be consistent with the forest Stewardship Plan and identify how the intended results or strategies described in the forest stewardship plan apply to the site.

**Woodlot licence plan** – must specify intended results and strategies and be consistent with objectives set by government for a defined set of resource values

**Licensee plans** – detail the logistics for forest and range development in particular locations. Methods, schedules and responsibilities for accessing, harvesting, renewing, and protecting the resources are set out to enable site specific operations to proceed. Licensee plans include forest development plans, range use plans, silviculture prescriptions and site plans. (*Forest Practices Code of British Columbia Act*)

**Permanent access structures:** are roads, landings, borrow pits, gravel pits, and quarries that are required to be used or provide access for timber harvesting or other forest management activities and whose continuous or periodic use will continue for a long enough time to prevent the re-establishment of forested vegetation. Permanent access structures are not part of the productive landbase. (*Forest Practices Code of British Columbia Act*)

**Rare ecosystem:** is an ecosystem (site series or surrogate) that makes up less than 2 percent of a landscape unit and is not common in adjacent landscape units. (*Forest Practices Code of British Columbia Act, Biodiversity Guidebook*)

**Seral stage distribution:** the stages of ecological succession of a plant community (e.g., from young stage to old stage). The characteristic sequence of biotic communities that successively occupy and replace each other by which some components of the physical environment become altered over time. (Glossary of Resource Planning Terms)

**Sustainable forest management:** 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. (CAN/CSA-Z809-02)

**Sustainable forest management system:** the structure, responsibilities, practices, procedures, processes, and time frames set by a registrar for implementing, maintaining, and improving SFM (see Figure 2 of Standard). (CAN/CSA-Z809-02)

**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 of Standard). (CAN/CSA-Z809-02)

## **Appendix 1: Research and Information Needs**

Refer to the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area.

## **Appendix 2: Identified Wildlife Management Species**

Refer to the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area.

## Appendix 3: Annual SFM Plan Reporting

### *Tolko Industries Ltd. TN Woodlands, Heffley Creek*

#### Annual Reporting

The Tolko, TN Woodlands, Heffley Creek SFM Plan will be monitored annually and the resulting report will contribute to an annual review to confirm that CSA performance measures are being met. Tolko's annual monitoring report also contributes to the TSA wide reporting that is provided to the SFM Advisory Group for review and comment.

The following Monitoring Responsibility Matrix describes Tolko staff responsibilities for documenting, tracking and reporting monitoring information. Documentation and reporting requirements, to support monitoring, are based on each Indicator's strategy for implementation, target, and monitoring and measuring procedures as described in Section 7 and Appendix 3 of the Kamloops TSA SFM Plan. Footnotes provide some direction and clarification of the documentation and reporting responsibilities. Documentation and reporting rely on Tolko's EMS and Phoenix data base.

#### Monitoring Responsibility Matrix

Indicators	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Regional Forester - Planning & Development		R									DR		DR <sup>7</sup>		
Planning Forester	D <sup>1</sup> R		DR				D <sup>2</sup> R	R	D <sup>5</sup>			D <sup>6</sup> R			
Area Supervisor		D		D	D										DR
Woodlands Staff														D	
IS Manager		R		D	D	DR		D <sup>3</sup>		DR			R	D <sup>8</sup> R	
Development Group								D <sup>4</sup>				D <sup>6</sup>			
TSA wide reporting									R						

**D:** Document – comments, reviews, results of reviews or inspections, plans etc

**R:** Report – provide monitoring report information

<sup>1</sup> Document during development/amendment of the Forest Stewardship Plan

<sup>2</sup> Document during SP development

<sup>3</sup> Obtain known Red-listed wildlife locations from CDC

<sup>4</sup> Document any Red-listed wildlife species noted during planning or development

<sup>5</sup> Ensure Tolko's strategies are aligned with the target, and review TSR results for any Tolko specific issues

<sup>6</sup> Document all actions related to targets 12 a, b, & c

<sup>7</sup> Review DM determinations and violation tickets

<sup>8</sup> Consult the area supervisors to determine if Tolko is meeting the objective

## Monitoring Responsibility Matrix Con't

Indicators	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Regional Forester - Planning & Development	DR	DR						DR	R		D	DR <sup>10</sup>		DR	
Planning Forester				R						R		DR <sup>11</sup>	D <sup>12</sup> R	D <sup>13</sup>	
Area Supervisor															
Woodlands Staff								D <sup>9</sup>	D				D <sup>12</sup>		
IS Manager					DR										DR
Development Group				D						D				D <sup>13</sup>	
TSA wide reporting			R			R	R				R				

<sup>9</sup> Report working relationships

<sup>10</sup> Document and report Target 27a

<sup>11</sup> Document and report Target 27b

<sup>12</sup> Document all actions related to targets 28 a & b

<sup>13</sup> Document research activities

## Appendix 4: Summary of Publicly Developed Values, Objectives, and Indicators

Refer to the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area.

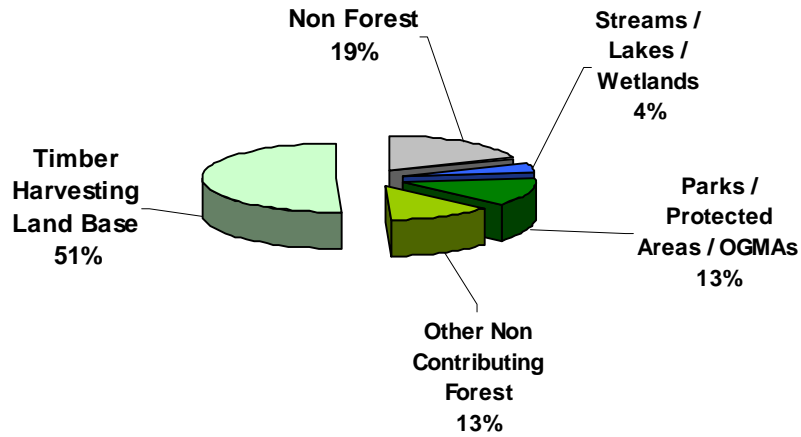
## Appendix 5: Summary of Certification Status

Tolko Industries Ltd., TN Woodlands, Heffley Creek (formerly Louis Creek Division) received a Certificate of Registration to the ISO 14001 Standard on July 20<sup>th</sup> 2001 based on an independent third party audit. The registration covered the Environmental Management System applicable to Tolko's forest management activities. Tolko has continued to retain this certification.

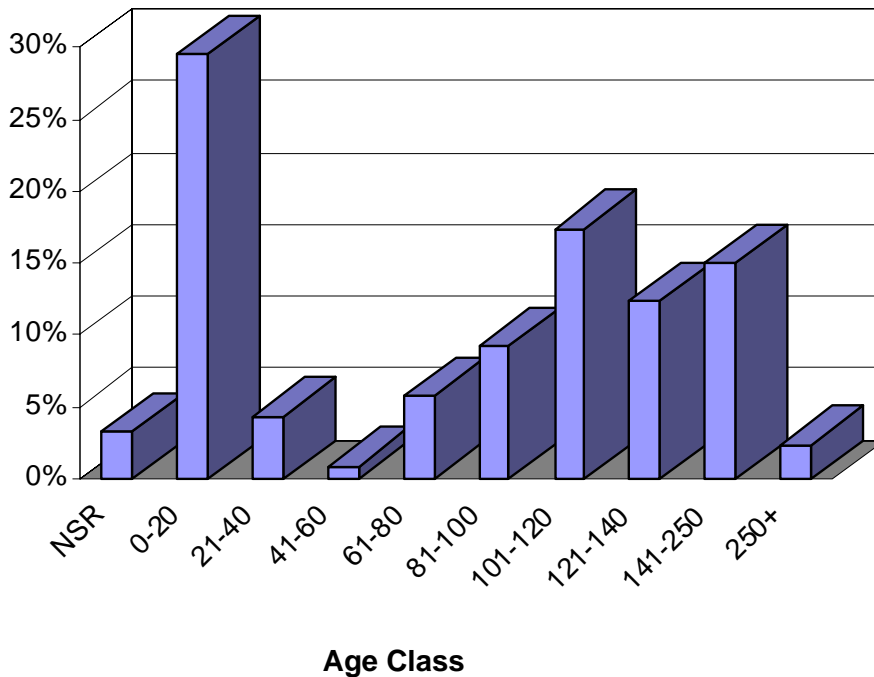
Tolko has been an active participant in the Kamloops TSA Canadian Standards Association (CSA) Sustainable Forest Management (SFM) process since its inception and has been reporting annually against the SFM plan since 2000. In 2002 Tolko engaged independent auditors from Quality Management Institute (QMI) to audit the division against the CAN/CSA Z809-1996 standards. Following a successful audit Tolko became registered to the Standard in July 20, 2002. In 2005 QMI completed a recertification audit and confirmed Tolko's continued conformance to the standard.

# Appendix 6: DFA Land Base and Forest Cover

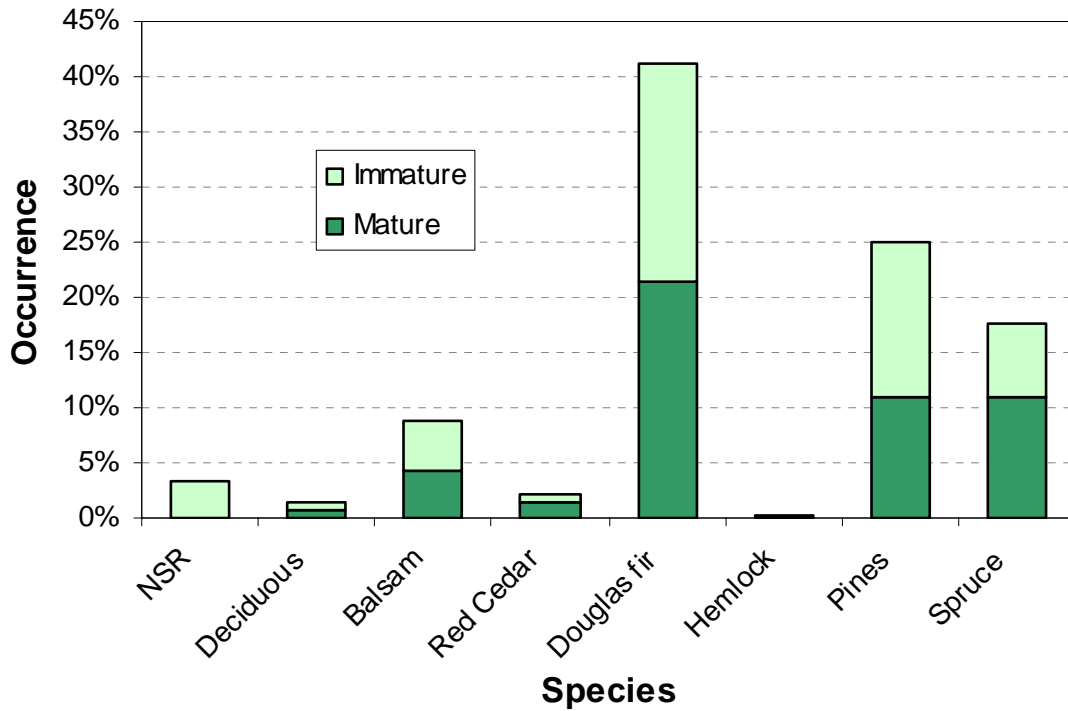
Gross landbase (Ha)



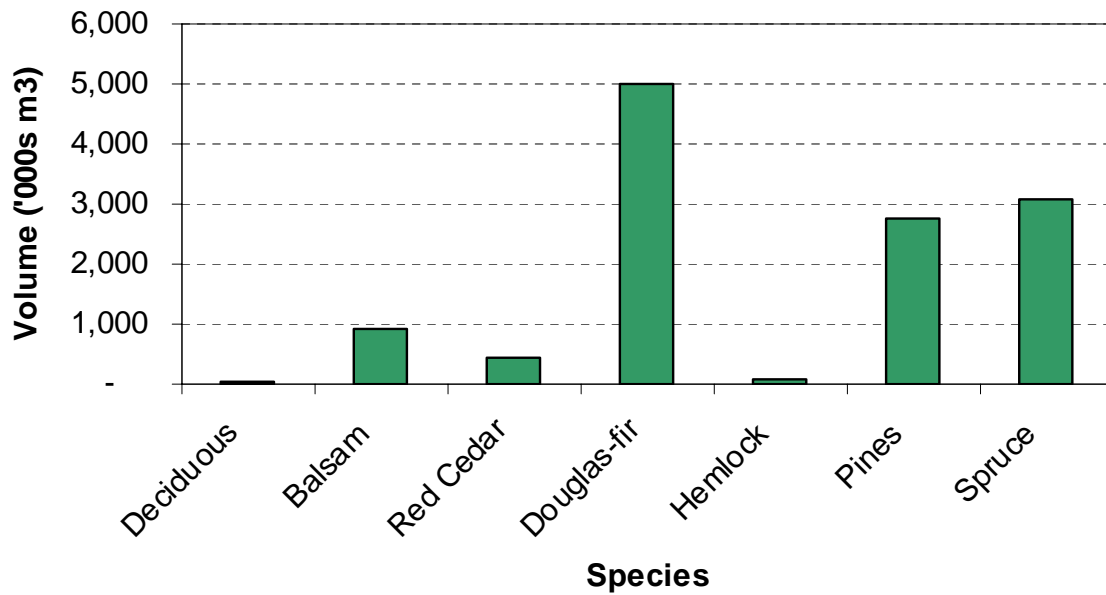
Age class distribution – THLB (Ha)



*Tree species and maturity occurrence (Ha) – THLB*



*Mature volume by species – THLB*



## **Appendix 7: Sustainable Resource Management in BC (Determination of AAC)**

Public lands in British Columbia are managed to sustain forest resources. In British Columbia, approximately 90 percent of commercial timber production is carried out on Crown land. The Ministry of Forests and Range regularly reviews the rate of timber harvesting to ensure that it is consistent with current timber management, environmental, and social objectives. The Chief Forester, supported by a Timber Supply Review, determines the Annual Allowable Cut (AAC) for each Timber Supply Area (TSA) periodically. In the Kamloops TSA Tolko Industries has the rights to a portion of the AAC through Forest License tenures.

### **What do we mean by timber supply?**

Timber supply is the rate at which timber is made available for harvesting. It is a measure of the potential flow of logs out of the forest. Timber supply is not the same as the inventory, or amount of timber in the forest.

The size and productivity of the area available for commercial timber production (timber harvesting land base) determine the amount of timber that can be produced over time. Economic, environmental and social factors shape the manner and rate at which this timber may be harvested.

Economic values, such as prices for wood products, influence the species and location of timber that can be harvested profitably. Environmental values, such as riparian buffers, and social values, such as visual quality, affect where and when harvesting can take place.

Therefore, the flow of available timber out of British Columbia's forests can be thought of as the response to consumer demand for wood products, but moderated by public policy, which determines the rate and distribution of harvesting.

### **Timber Supply Review (TSR)**

The Timber Supply Review program began in 1992 to regularly update timber supply in each of the 37 timber supply areas (TSAs) and 33 tree farm licenses (TFLs) throughout the province. By law in British Columbia, allowable annual cuts (AACs) for TSAs and TFLs must be re-determined periodically.

The main objectives of the Timber Supply Review are to:

- identify the economic, environmental and social information that reflects current forest management practices; including their effects on the short-term and long-term timber supply;
- identify where improved information is required for future timber supply forecasts; and
- provide the Chief Forester with information to make any necessary adjustments to the AACs.

A timber supply area is an area of Crown land designated by the Minister of Forests and Range in accordance with the Forest Act and managed for a range of objectives including timber production.

## Timber supply analysis

Timber supply analysis is carried out to support many types of planning in British Columbia, including:

- land-use planning
- forest management planning
- the determination of an allowable annual cut (AAC)

Timber supply analysis is a process that explores the effects on timber supply of existing or possible forest management strategies and alternative timber harvesting levels. The process uses a computer model to forecast potential harvest levels in the forest, decade by decade, given a specific schedule of management activities. This analysis makes it possible to compare how alternative management strategies affect forest structure and timber production over time.

## Steps in Timber Supply Analysis to Support AAC Determination

### 1. *Categorize the landbase*

The productive forest land in a management unit is separated into the timber harvesting land base and the lands unavailable or inappropriate for timber production (e.g., lands designated for other uses, lands with sensitive or inaccessible terrain). Lands outside the timber harvesting land base still contribute to and are managed for other forest values (e.g., wildlife habitat, old growth).

### 2. *Project growth and yield*

Management activities such as tree planting and fertilization affect the way forests grow. Stand growth and timber yield are projected for each stand, based on current management. These projections are represented as timber yield curves that show the characteristics of a stand (e.g., timber volume/hectare, average stem diameter) at different ages.

### 3. *Identify management activities and requirements*

Current management activities, including those that enhance timber production (e.g., planting), and those that maintain or enhance other values (e.g., wildlife habitat, visual quality), are identified. The amount, timing, and location of each management activity is specified. Due to resource interactions (e.g., effects of timber harvesting on wildlife habitat), it is often necessary to restrict some activities to achieve several objectives. Some management requirements are designed to protect a resource or landscape feature; others are designed to create or enhance a resource characteristic.

### 4. *Model timber supply based on current management*

Timber supply analysis done by the Ministry of Forests and Range uses a computer model that simulates the way a forest grows and is harvested over time. Analysts evaluate the simulation results by examining how much volume was harvested, how much area was treated, and how some key characteristics of the standing forest (e.g., volume of growing stock, the area in each age class) were affected in every decade.

5. *Run sensitivity analyses*

Sensitivity analysis is carried out to evaluate sources of uncertainty in the data and management assumptions used in timber supply analysis. It is used to highlight the factors that most affect analysis results (e.g., where small changes in a management objective can cause large changes in timber supply). Such knowledge helps to establish priorities for collecting new information, and indicates where caution is required in interpreting results.

**The Timber Supply Review process**

The process for determining AACs for TSAs is based on a five-step process that takes approximately 22 months.

1. *Data package and information report*

BC Forest Service district staff, in co-operation with local BC Environment staff, assemble for the timber supply analysis, the best available information on the current forest resource inventory and practices within the TSA. Information about our forests, other resources and management practices are summarized and documented in a data package. The key elements of this technical report are then published in an information report.

The previously described first three steps of timber supply analysis are completed at this stage (categorize the landbase, project growth and yield, identify management activities and requirements)

2. *Public review*

After the information report is released, there is a 30-day public review period. Interested groups are provided with copies of the information report and the data package is available upon request from the local forest district and regional offices. Particular attention is paid to informing timber tenure holders, forest workers, stakeholders, First Nations and local government officials. After the public review, the BC Forest Service reviews the public input and makes any necessary changes to the data and management assumptions that will be used in the Timber Supply Area Analysis Report.

3. *Timber supply area analysis report and public discussion paper*

Computer models are used to project timber supply over 250 years based on the inventory information, expected growth, and management practices. Since forests are complex and constantly changing, timber supply analysts evaluate the implications for timber supply of uncertainty about the variables in the inventory information and management practices.

The computer model is also used to generate a base case forecast—a timber supply forecast that illustrates the effect of current forest management on timber supply. It is not an AAC recommendation, but rather, it is one of many pieces of information that the Chief Forester will consider when determining the AAC.

Other sections of the analysis report provide information about the social, economic and environmental aspects of the TSA, including:

- a description of the environment and ecology of the area;
- a description of the communities and industries in the area;
- a description of the timber harvesting and processing industries that rely on timber from the area;

- an assessment of current timber flows and employment conditions; and,
- an assessment of the socio-economic impacts of adjusting the AAC.

The results of these analyses are compiled in a Timber Supply Area Analysis Report. This technical report is summarized in a Public Discussion Paper. Both documents are released for a two-month public review and comment period.

The last two steps of timber supply analysis are completed at this stage (model timber supply based on current management, run sensitivity analyses

#### *4. Public review*

During this two-month public review period, the BC Forest Service actively solicits public input by holding meetings with interested parties and in some instances, open houses may be held in the communities within the TSA. All public input collected at this time is presented to the Chief Forester. It is summarized and documented in the Summary of Public Input that is available to the public once the Chief Forester has announced the new AAC.

#### *5. AAC Rationale Statement and Summary of Public Input*

The AAC is the allowable rate of timber harvesting in a management unit such as timber supply area (TSA) or a tree farm licence (TFL). The AAC is set for each of the province's 37 timber supply TSAs and TFLs by the Chief Forester.

Determining AACs for Crown forest land in B.C. is one of the Chief Forester's most important responsibilities since it affects local and provincial economies, community stability and the environment-now and in the future. In recognition of this, Section 8 of the Forest Act, requires the Chief Forester to consider a wide range of environmental, social and economic factors such as:

- the rate of timber production that may be sustained from the area;
- the short- and long-term implications to the province of alternative rates of timber harvesting from the area;
- constraints on the amount of timber produced from the area due to use of the forest for purposes other than timber production;
- the economic and social objectives of the Crown, for the area, the region and the province, as expressed by the minister of forests; and
- abnormal insect or disease infestations and major salvage programs planned for the area.

Some of these factors can be measured and analyzed-others cannot. Ultimately, the Chief Forester's determination is an independent professional judgment. The minister of forests does not direct the Chief Forester when setting an AAC.

In addition, the Chief Forester considers the following information that falls under Section 8 of the Forest Act:

- the Timber Supply Area Analysis Report;
- the Summary of Public Input;
- any other information the Chief Forester considers to be necessary.

After weighing all these factors, the Chief Forester sets the AAC for the next five years, or until his next determination, and outlines the reasons in a rationale statement. Once finalized, the Rationale Statement with the Summary of Public Input attached are released to the public.

### **Public involvement in Timber Supply Review**

Public involvement and comment are important in the Timber Supply Review. During the process, there are opportunities for the public to attend meetings, review reports and provide public input, which the Chief Forester considers in his AAC determination.

### **A commitment to incorporate change**

The Forest Act requires the Chief Forester to periodically redetermine the AACs for each TSA and TFL to ensure AACs are current and reflect new information, new practices and new government policies. Implementation of major government initiatives such as the Forest Practices Code and Land and Resource Management Plans may have significant impacts on the timber supply in specific TSAs and TFLs. In these cases, the Chief Forester may determine the AACs more frequently.

### **Public policy and timber supply**

Five statutes form the legal framework for forest management on Crown lands in British Columbia: *the Forest Act, the Forest Practices Code of British Columbia Act, the Ministry of the Forests Act, the Forest and Range Practices Act, and the Range Act*. Numerous other provincial and federal acts have implications for forestry, as well a multitude of regulations, guidelines and policies apply to all aspects of forestry on Crown lands.

Policies are dynamic. Forest policies are developed based on the social, environmental and economic values of the time, including:

- how British Columbians value their forest resources-not only timber, but also resources such as wildlife habitat, water quality and recreation
- how much of those resources society chooses to consume now, versus in the future.

*Timber harvesting is regulated to meet current management objectives and to ensure a flow of timber at a level that can be sustained over time. This long-term*

### **Changes to harvest levels**

Current harvesting in British Columbia takes place primarily in older forests that have accumulated high timber volumes by growing for long periods-in some cases, hundreds of years. However, the forests that will regenerate on these sites will likely be harvested in the future at younger ages, and so will yield lower volumes per hectare. Consequently, in most areas of the province, the level of harvesting will decline over time as the forest industry shifts from harvesting higher volume, old-growth forests, to harvesting younger forests of lower volume. This transition from harvesting older to younger forests does not mean that all of British Columbia's old-growth forests will be harvested.

As well, while the volume harvested over time may decrease significantly in some locations due to the change in harvest age, less change is expected in the area harvested.

Of the province's 90 million hectares of Crown land, approximately 49 million hectares are forested. About half of this area is managed for commercial timber production in timber supply areas and tree farm licenses. This timber harvesting land base is managed according to the Forest Practices Code and other forest policies. Roughly one-quarter of the timber harvesting land base is managed

### **Factors influencing timber supply**

The amount of timber that a forest produces depends on the size and productivity of the landbase, the tree species growing there, and the way that the forest is managed. Changes in land-use designations, management objectives, and forest policies also affect British Columbia's timber supply. For instance:

- increasing the timber harvesting land base, or improving its productivity through treatments such as fertilizing, can increase the amount of timber available for harvesting
- changing the management objectives for an area—such as to maintain visual features—may reduce the timber available for harvesting or the rate at which harvesting can occur
- implementing new forest management guidelines (e.g., for road building and harvesting) may affect the availability of timber for harvesting
- harvesting some stands that were previously unprofitable may be feasible if the price of wood products increases.

### **Alternative rates of harvest to the long term harvesting level (LTHL)**

In setting the allowable annual cut in most management units, the Chief Forester is choosing a transition strategy from current harvest levels to the long-term harvest level. In some management units, this transition will be characterized by a decreasing allowable annual cut and in others by an increasing allowable annual cut. In other management units, the allowable annual cut is already at the currently forecast long-term harvest level.

Many possible rates of harvest may be followed from a current harvest level to the long-term harvest level. Four alternatives are discussed here. Scenario 1 maintains the allowable annual cut for one decade, followed by a steep rate of decline to the long-term harvest level. Scenario 2 reduces the allowable annual cut in a series of smaller steps to the long-term harvest level, which can be maintained for a number of decades. In Scenario 3 an immediate drop to the long-term harvest level would occur. Scenario 4 maintains current harvest levels for approximately three decades, then makes a steep drop in cut to a level below the long-term harvest level; the harvest level then gradually increases to the long-term harvest level.

In evaluating alternatives such as these, the Chief Forester must consider the state of the forest, the factors identified in Section 8 of the *Forest Act*, and the minister of forests' statement of the economic and social objectives of the Crown. These objectives include minimizing adjustment costs to communities and limiting decreases in allowable annual cut to those necessary to avoid compromising long-run sustainability.

In this context, the Chief Forester would likely consider Scenario 3 inappropriate since it represents a major, immediate drop in harvest and production with consequent effects on the local economy. Scenario 4 would probably be considered inappropriate since it involves a sharp drop to below the long-term harvest level. In choosing between scenarios 1 and 2, the Chief Forester would consider the characteristics of the affected communities (e.g., economic diversification) and of the forest (e.g., age-class distribution), as well as any uncertainties in the data.

The Chief Forester determines how much wood, in aggregate, can be cut in each management unit. Once an allowable annual cut has been determined for a timber supply area, the minister of forests apportions that cut to various forms of agreements (timber tenures) under the *Forest Act*.

### **Timber supply analysis and land-use planning**

Forest planning on Crown land involves both resource professionals and the public. Processes such as land and resource management plans and local plans bring together interest groups to identify forest values and management objectives for a designated area. Based on these findings, participants develop broad statements of management direction and, eventually, a land-use proposal or options for the area. The land-use proposal or options are then referred to various agencies for analysis. Timber supply analysis is carried out or administered by the BC Ministry of Forests and Range.

Timber supply analysis supports the planning process by assessing the extent to which each land-use proposal or option meets specified management objectives under specified forest policies and practices. The analysis also forecasts the implication of each proposal or option for the timber supply in the area. Therefore, timber supply analysis is a tool used to support planning, but the plan itself is developed by participants through a planning process.

### **Timber supply analysis and forest management planning**

Different factors or combinations of factors limit the supply of timber in different timber supply areas or tree farm licenses. For example, the productivity of the land may be the determining factor in one area, while the age of existing stands may be important in another. As a result, specific management activities, such as planting with genetically improved seedlings, may influence the short- or long-term timber supply in some areas more than in others.

Timber supply analysis can support silviculture program planning by allowing managers to explore different combinations of treatment type (e.g., fertilization), treatment amount (e.g., area fertilized each year), and treatment timing (e.g., the years or decades in which fertilizing should be done). Without analysis it would be impossible to predict the outcomes and time frames of incorporating new information and silviculture practices. Timber supply analyses show that with careful planning and management it may be possible to affect the size and duration of the fall-down in a given management unit.

## **Appendix 8: Parking Lot**

Refer to the 2007 Sustainable Forest Management Plan for the Kamloops Timber Supply Area.

## **Appendix 9: Thompson Nicola Woodlands, Heffley Creek SFM Plan Defined Forest Area Map**

Following page

