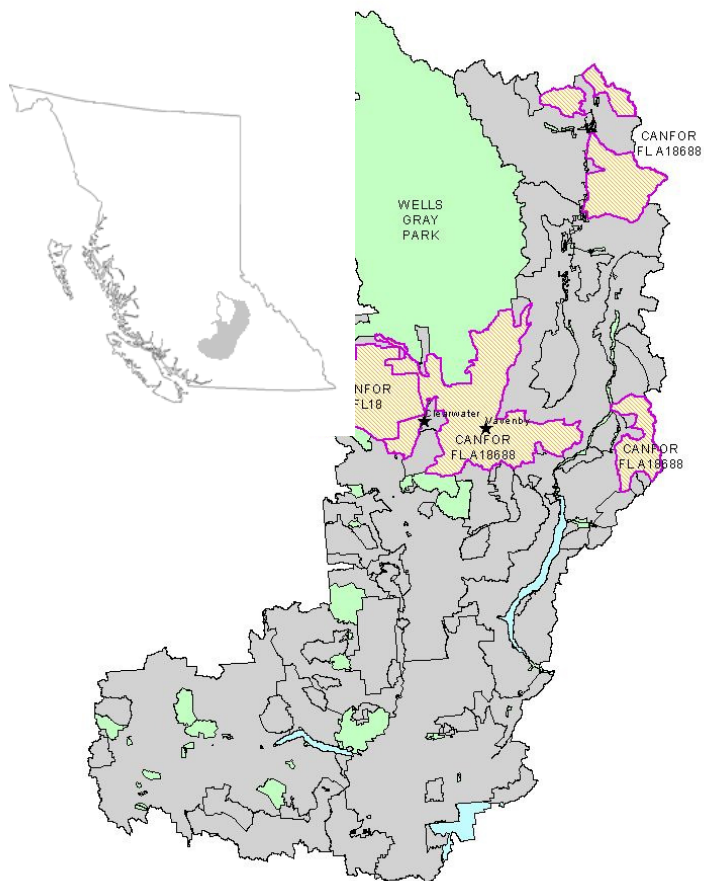


# Sustainable Forest Management Plan for the Canfor-Vavenby Division Defined Forest Area



**May 2010**

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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 and North Thompson Area.*

# Executive Summary

Between February and June 2000 the forest tenure holders ("licences") operating in the Kamloops Timber Supply Area (TSA) worked with a group of public and First Nation representatives (the SFM Advisory Group) to develop a Sustainable Forest Management (SFM) Plan.

Members of the SFM Advisory Group represented a cross-section of local interests including recreation, tourism, ranching, forestry, conservation, water, community, and First Nations.

The SFM Plan includes a set of values, objectives, indicators and targets that address environmental, economic and social aspects of forest management in the Kamloops - North Thompson. The Plan is based on the Canadian Standards Association (CSA) Sustainable Forest Management; Requirements and Guidance, which is one of the primary certification systems currently being used in British Columbia. An SFM Plan developed according to the CSA standard sets performance objectives and targets over a defined forest area to reflect local and regional interests. Consistent with most certifications, and as a minimum starting point, the CSA standard requires compliance with existing forest policies, laws and regulations. This SFM Plan has undergone substantive revisions with the rewriting of the CSA SFM Standard, initially in 2003 and again in 2009. Changes to this plan reflect the 2008 standard requirements and the public meetings held to implement these changes.

Irrespective of changes occurring to the CSA SFM Standard, the SFM Plan is an evolving document that is reviewed and revised on an annual basis with the SFM Advisory Group to address changes in forest conditions and local community values. All active forest licences are committed to the achievement of the SFM Plan. Each year the SFM Advisory Group reviews an annual report prepared by the licences to assess achievement of performance measures. This monitoring process provides the licences, public and First Nations an opportunity to bring forward new information, and to provide input concerning new or changing public values that can be incorporated into future updates of the SFM Plan.

Following completion of the SFM Plan and the development of an environmental management system, a licensee may apply for registration of its operating area under the CSA standard. Participants being registered to the CSA standard are audited by an eligible independent third party auditor.

The Kamloops – North Thompson SFM certification website contains the latest information on the process, including the SFM Plan, and can be viewed at:

[www.kamloopssustainableforestry.ca](http://www.kamloopssustainableforestry.ca)

# 1.0 Introduction and Overview

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. A Sustainable Forest Management (SFM) Plan developed according to the CSA standard, sets performance objectives and targets over a defined forest area to reflect local and regional interests. This standard requires that SFM Plan development, maintenance and improvement include significant public involvement. Public Advisory Groups (PAG's) composed of a cross-section of local interests, including recreation, tourism, ranching, forestry, conservation, water, community, and First Nations, fulfill this role.

Active forest licencees<sup>1</sup> in the Kamloops Timber Supply Area (TSA), working with the PAG, developed, and are maintaining and continuously improving, the Kamloops - North Thompson SFM Plan based on the CSA standard. The Plan was written with the opportunity to provide management direction to all licenced forest land within the TSA and Tree Farm Licences (TFL's) 18 and 35.

Forest licencees in the Kamloops - North Thompson have been working with the public to develop responsible forest management plans for over 25 years. Many planning processes, including those for Forest Stewardship Plans, provide for public and First Nations review and comment. Licencees prepare Forest Stewardship Plans that consider the direction provided. Licencee standards, and operating plans, are continuously updated as new information comes forward. The SFM Plan is an example of the commitment of licencees to adapt their management practices in response to changes in society's values.

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 of the TSA. The Plan is consistent with strategic plans such as the Kamloops Land and Resource Management Plan (KLRMP) and the Kamloops Future Forest Strategy (KFFS).

It is the intent that the values, objectives, indicators, targets, and guiding principles described in this Plan will continue to be adhered to by all active forest licencees in the TSA, supporting sustainable forest management in the TSA. The SFM Plan is continuously evolving. It is reviewed and revised on an annual basis, with the SFM Advisory Group, to reflect changes in forest condition and local community values.

More information about the Kamloops - North Thompson certification process, Sustainable Forest Management Planning, meeting summaries, annual reporting and maps can be obtained at the Kamloops - North Thompson Certification website: [www.kamloopssustainableforestry.ca](http://www.kamloopssustainableforestry.ca)

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<sup>1</sup> Referred to as 'active licencees' or 'licencees' throughout this report -- refer to Sec 4.2.1.1 for a more complete description

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## 2.0 The Plan Area

### 2.1 Area Description

The Defined Forest Area (DFA) for Canfor-Vavenby SFM Plan is located in the southern interior of British Columbia. The DFA resides wholly in the Headwaters Forest District of the Southern Interior Forest Region.

The DFA includes Crown land within Canfor's Forest Licence A18688 (FL A18688), as well as Tree Farm Licence 18 (TFL 18). Woodlot Licences, as well as all private land are excluded. The DFA includes areas that are not available for harvesting; those include parks, inoperable areas and non-productive areas. Table 1 provides a breakdown of the landbase within the DFA. A map of the DFA, including both FL A18688 and TFL 18 is found in Appendix 1. The FL A18688 area also included areas to the south of the traditional operating area to assist other licensees in addressing the mountain pine beetle infestation.

**Table 1: DFA Landbase Summary**

<b>DFA Land Base</b>	<b>DFA Area (ha)</b>	<b>TFL #18 Area</b>
Total TSA	2,666,375	74,542
Crown Ownership – approx. 67%	1,773,481	74,542
Crown Forested Land Base (CFLB) – approx. 53%	1,409,110	67,315
Non-Productive / Private, inoperable... – approx. 14%	368,250	6,575
Timber Harvesting Land Base (THLB) <sup>2</sup> – approx. 39%	1,040,860	63,812

### ***Biophysical Information***

This DFA is found in the northern portion of the Kamloops TSA. In this portion, the North Thompson River is bounded by the high peaks of the Monashee and Cariboo Mountains. These mountains – part of the Interior Wet Belt – experience wet to very wet conditions, with high snowfalls. The valley bottoms are covered in dense cedar-hemlock forest, changing to spruce-balsam at higher elevations.

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<sup>2</sup> The timber harvesting land base (THLB) is the portion of the management unit where forest licensees under license to the province of BC are expected to harvest timber. The THLB excludes areas that are inoperable or uneconomic for timber harvesting, or are otherwise off-limits to timber harvesting. The THLB is a subset of the crown forested land base.

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## Biogeoclimatic Ecosystem Classification (BEC) & Tree Species

The DFA includes six biogeoclimatic zones that are listed and described in Table 3.

**Table 2: BEC Zones in the DFA**

<b>Biogeoclimatic Zones (Elevation)</b>	<b>Location/Description</b>
Interior Douglas-fir (IDF) zone (between 350 and 1450 m)	Dominates the lower to mid-elevations and generally occurs between the Ponderosa Pine Zone and the Montane Spruce Zone
Montane Spruce (MS) zone is found at mid-elevations (between 1300 and 1650 m)	Often between the Interior Douglas-fir Zone and the Engelmann Spruce-Subalpine Fir Zone in the southern half of the TSA.
Interior Cedar-Hemlock (ICH) zone (1400 to 1450 m)	Generally in the northern and central parts of the Kamloops TSA above the IDF zone.
Sub-Boreal Spruce (SBS) zone (1000 to 1450 m)	Occurs at middle elevations in central portions of the TSA on the Nehalliston Plateau, generally below the Engelmann Spruce-Subalpine Fir zone.
Engelmann Spruce-Subalpine Fir (ESSF) zone (from 1500 to 2050 m)	This is the uppermost forested zone in the Kamloops TSA - generally above the ICH, SBS or MS zones, below the Alpine Tundra zone.
Alpine Tundra (AT) Zone (above 2000 m in the south, 2200 m in the north of the TSAP)	Lies above the ESSF Zone, and is by definition treeless although stunted (or krummholz) trees are common at the lower elevations of this zone. Overall, this zone is dominated by rock, ice and grassy meadows. The Alpine Tundra (AT) zone occurs at the highest elevations, above the ESSF zone.

## Parks

Portions of the DFA are adjacent to Wells Grey Provincial Park. Taweel Park occupies 282 ha in the southern portion of TFL 18. Several campsites and recreation areas are also located in TFL 18 as well as 2 forest recreation campsites in FL A18688.

## Wildlife & Wildlife Habitat

The diverse forests of the DFA host a wide variety of wildlife species including grizzly bear, black bear, moose, mule deer, goat, California bighorn sheep and marten. Appendix 2 provides a listing of identified wildlife species at risk that exist within the DFA. In addition, Vavenby maintains a database of identified wildlife species and their associated habitat requirements. This database is used as a tool to assist in managing for applicable habitat.

The TSA overlaps the range of a provincially important and viable herd of mountain caribou. Due to winter conditions, these caribou require sufficient canopy cover, provided by mature forests, to move between feeding areas, which requires attention during planning of forest development activities.

## Riparian

The DFA contains numerous fish bearing lakes, (particularly in TFL 18) and salmon-producing streams, as well as many additional fish-supporting streams. These waterbodies support some of the

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finest inland fisheries in B.C. Species of high recreational or economic value include rainbow trout, steelhead, kokanee, brook trout, and Dolly Varden. The Thompson, North Thompson, South Thompson and Adams rivers and their tributaries support a significant population of anadromous fish — steelhead and sockeye, coho, chinook and pink salmon. The North Thompson River also contains most of the wild stocks of rainbow trout within the TSA.

### ***Socio- Economic Description***

According to the 2006 census, the population of the Kamloops TSA was 114,675, a 2.6 percent increase from 2001. Almost 80 percent of the TSA's residents live in the City of Kamloops. Other communities include Ashcroft, Cache Creek, Savona, Chase and Logan Lake in the south, and Avola, Barriere, Blue River, Clearwater, Little Fort and Vavenby in the north. The population for the Canfor-Vavenby DFA is concentrated in Clearwater and Vavenby with a combined population of approximately 5,000.

### **Tenure Description**

The Canfor-Vavenby DFA is comprised of Forest Licence A18688 and Tree Farm Licence 18. These replaceable licences grant Canfor the right to harvest an allowable annual cut (AAC) of Crown timber each year, which is specified in cutting permits and road permits. The tenure allows Canfor to harvest, process, sell and distribute wood products derived from the forest area in the Kamloops TSA. Canfor retains the reforestation responsibility until trees are free growing and has responsibility for road construction and maintenance.

### **Current AAC**

In British Columbia, the annual allowable cut (AAC) for all TSAs and TFLs is established every five years by the Chief Forester or Deputy Chief Forester of the province. The current allowable annual cut of the Kamloops TSA is 4,000,000m<sup>3</sup> effective June, 2008. This current AAC consists of seven components:

- \* Stands dominated by Douglas-fir, spruce or balsam a maximum of 1 700 000 cubic metres;
- \* For harvesting of pine dominated stands, 1 994 000 cubic metres
- \* a partition of 200 000 cubic metres per year for old cedar and hemlock stands;
- \* a partition of 86 000 cubic metres per year for Pulpwood Agreement 16.
- \* A partition of 20 000 cubic metres per year for deciduous

TFL 18 is a replaceable area based tenure issued by the Government of BC to Canfor. It grants the Company the right to harvest an allowable annual cut (AAC) of 259,000 cubic metres of Crown timber each year, during the term of Management Plan #10 which is 2006 - 2011. This AAC includes an uplift to accelerate the salvage of mountain pine beetle attacked timber. In



addition, 10,500 m3 annually is allocated to BC Timber Sales (BCTS). The AAC is scheduled for review based on Management Plan #11 at the end of 2010.

Replaceable forest licenses account for 72% of the apportionment of the AAC. Canfor has rights to 231,750 m3 attached to its replaceable forest licence, accounting for 8.7% of the current AAC in the TSA. The specific boundary of the FL A18688 is contained within Canfor's GIS and agreed to by all Licensees and the Government within the TSA (Appendix 1). Table 3 presents the current apportionment and commitments for the Kamloops TSA.

**Table 3: Kamloops TSA AAC Apportionment and Commitments (m<sup>3</sup> & % of AAC)**

<b>Licensee by Form of Agreement</b>	<b>m<sup>3</sup>/year</b>	<b>% of AAC</b>
Forest Licences Replaceable	1,570,767	<b>39.27</b>
<i>Tolko Industries Ltd.</i>	250,923	16.0
<i>Gilbert Smith Forest Products Ltd.</i>	61,940	3.9
<i>Canadian Forest Products Ltd.</i>	209,638	13.3
<i>International Forest Products Ltd.</i>	539,594	34.4
<i>West Fraser Mills Ltd.</i>	495,400	31.5
<i>Stella-Jones Canada Inc.</i>	13,272	
Forest Licences Non-Replaceable	1,446,887	<b>36.17</b>
BCTS Timber Sale License/License to Cut	764,476	<b>19.1</b>
Woodlot Licences	15,000	<b>0.38</b>
Forest Service Reserve	117,000	<b>2.93</b>
Pulpwood Agreements – PA 16	86,000	<b>2.15</b>
<b>2008 Determined Annual Cut<sup>3</sup></b>	<b>4,000,000</b>	<b>100.0</b>
<b>2004 Determined Allowable Annual Cut</b>	<b>4,352,770</b>	
Tree Farm Licence #18	279,500	

Source: Ministry of Forests, Revenue Tenures and Engineering Branch

## **Employment & Services**

Canfor is the fourth leading forest industry employer in the TSA, after International Forest Products Ltd (Interfor), Tolko Industries Ltd. (Tolko), and West Fraser Mills Ltd. Canfor owns a dimension lumber mill at Vavenby and has rights to approximately 13% of the TSA's AAC, in addition to the 279,500m3 AAC from TFL 18. In addition to the volume obtained from Canfor licences in the DFA Canfor purchases approximately an additional 200,000m3 to meet the needs of the Vavenby mill.

Including harvesting, planning, transportation, and timber processing from both FL A18688 and TFL 18 Canfor generated an average of 191 person years of forest industry employment involved with harvesting and processing its' Kamloops TSA Forest Licence and Tree Farm timber over the 2001 - 2007 period.

Canfor's dimension lumber mill in Vavenby has an annual capacity of 150 million board feet of lumber. It produces high quality dimension lumber and is one of the only mills in the provinces interior specializing in long length lumber (18' to 24') to meet market demand for a higher value product. Residual chips are currently shipped to Domtar Pulp in Kamloops. The majority of waste wood/Hog fuel is also shipped to Domtar. Table 4 presents recent harvesting and employment results for Canfor in the Kamloops TSA.

**Table 4: Canfor annual average harvests and employment, 1997-2000**

<b>Canfor Harvest / Employment</b>	<b>Result from TSA and TFL Landbase</b>
<b>Harvest</b>	<b>Timber volume (m3)</b>
Allowable Annual Cut (AAC)	489,138
Annual average harvest, 2001-2007	465,560
2007 harvest	464,255
<b>Employment</b>	<b>Person-Years (PYs)</b>
Harvesting, planning & administration	104
Timber processing	87
<b>Total</b>	<b>191</b>

Source: Ministry of Forests, survey of licensees, TSR 3 Analysis Report and TFL 18 AAC Determination

### **Community Dependence**

The Kamloops TSA timber harvest provides roughly 13% of the basic employment in the TSA. The volume harvested from FL A18688 and TFL 18 provides a significant contribution to employment in the local area.

### **Non Forestry Tenures & Interests**

Other tenures within Canfor's DFA include traplines, guide outfitters, range tenures, domestic and irrigation water licences.

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## 2.2 Mountain Pine Beetle

### Overview

Mountain pine beetle is severely impacting mature lodgepole pine stands in the southern part of the Kamloops - North Thompson area. A summary of the current situation is described based on excerpts from the following publications:

- Kamloops TSA – MoFR Rationale for Allowable Annual Cut Determination, Jim Snetsinger, Chief Forester. June, 2008
- Kamloops TSA, MoFR Timber Supply Review Public Discussion Paper. October 2007.
- Beetle Facts, MoFR website: [http://www.for.gov.bc.ca/hfp/mountain\\_pine\\_beetle/facts.htm](http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/facts.htm)
- Forest Health Strategy - Kamloops TSA May 2009  
[http://www.for.gov.bc.ca/dka/Forest\\_Health/Doc/](http://www.for.gov.bc.ca/dka/Forest_Health/Doc/)

The mountain pine beetle (MPB), *Dendroctonus ponderosae* Hopkins (Coleoptera: Scolytidae), is the most damaging insect attacking lodgepole pine forests in BC. Mountain pine 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 with an exponential increase seen in 2004 as a result of the 2003 beetle flight.

### Area Affected

Thirty-one percent of the area in the TSA, twenty-four percent of TFL 18 and thirty-six percent of TFL 35 has lodgepole pine (PI) as the leading species. This exposure, from a volume perspective equates to almost 60,000,000 m<sup>3</sup> in PI leading stands susceptible to MPB attack. Beetle susceptibility models suggest that the majority of the PI stands in the TSA have or will have MPB populations that threaten their survival. The 2004 aerial overview surveys for the Kamloops TSA resulted in classifying about 124,401 hectares as attacked. The area mapped for MPB in 2008 was 309,606 hectares.

The current year conditions can be summarized as follows:

- More than fifty-eight percent of PI leading stands older than 60 years already has some level of attack that was visible to mappers conducting the 2008 aerial survey.

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- Regional estimates based on Provincial history to date are eighty percent of the susceptible PI stands in the TSA will be attacked to some significant level.
  - High beetle population levels can be found in some stands in all parts of the KFD and the southwest part of the Headwaters Forest District (HFD).

## **Strategy and Response**

In response to the economic importance of lodgepole pine and the potential impact of the current beetle infestation on forest-dependent communities in BC's interior, the forest industry and government jointly created the Mountain Pine Beetle Emergency Task Force in 1999 to manage and reduce the impact of the infestation. One of the objectives of the Task Force is to ensure that mitigation measures are well planned and as effective as possible.

Management strategies have been aggressive and successful in reducing the spread of the infestation and limiting the amount of killed timber in some areas. The strategies have also assisted in securing the maximum value in pine forests that have been killed or threatened by the beetle. To this point in time most of the harvest has been concentrated on higher value stands for the recovery of sawlogs. However, this aggressive strategy has led to large harvest areas within even larger areas of natural disturbance caused by the beetle.

Going forward, additional landscape level retention strategies are urgently needed, particularly in forests consisting primarily of lodgepole pine. Areas of higher potential biological diversity need to be identified and reserved as necessary from future salvage operations looking to recover value from dead lodgepole pine.

The current MPB epidemic is having a significant impact on communities and forest values. The Kamloops TSA MPB Strategy has been developed to provide guidance for harvesting of lodgepole pine (PI) stands susceptible to MPB attack. The strategy addresses the Timber Harvesting Land Base (THLB). The strategy is intended to focus resources in response to the epidemic levels of attack by identifying the significant issues created by the MPB infestation and providing information and guidance to address them. The Kamloops TSA MPB Strategy has the following six objectives:

1. Assessing the Extent of the Current Infestation and Forecasts Future MPB Impacts
2. Providing Guidance for Salvage Harvesting.
3. Developing Salvage Priorities
4. Assessing Capacity and Allocates Resources
5. Addressing Administrative Challenges.
6. Identifying Next Steps.

The Kamloops TSA strategy aligns with Objectives 3 to 7 of British Columbia's Mountain Pine Beetle Action Plan – 2005 – 2010 (9.2). The Kamloops strategy incorporates many of the activities identified for each of these objectives. The complete strategy document is available on the Kamloops Forest District website at: <http://www.for.gov.bc.ca/dka/> .

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The large number of MPB related research projects being undertaken provides an extensive amount of information. The Kamloops TSA MPB strategy attempts to address the most common themes. It is a living strategy that will require regular reviews and updating to reflect:

- Actual progress of the MPB
- Addressing MPB impacted stands initially by-passed as lower priority for salvage
- New or improved information as it is developed
- Changing social and economic circumstances and forestry priorities
- Assessing future forest conditions and management within extensively harvested areas

### **The Extent of Current and Future Infestations**

To determine the extent of current and future infestations, the Timber Supply Review data has been updated, susceptible stands have been identified, current MPB attack has been mapped and forecasts of future attack levels and intensities have been developed. This data, along with the MPB Strategy were all factored into the Chief Forester's AAC determination for the Kamloops TSA (May, 2008).

### **Summary of the Chief Foresters AAC Determination for the Kamloops TSA**

A timber harvest level that accommodates as far as possible the objectives for all forest resources during the next five years, including the increased harvesting necessitated by the Mountain Pine Beetle infestation. One that reflects current management practices, the socio- economic objectives of the Crown, and the required adjustment in respect of the change in accounting for interior log grades. The harvest level can be best achieved in the TSA by establishing an AAC of 4.0 million cubic metres, effectively a net reduction from the former AAC of 8.1 percent. This new AAC includes partitions specifying allowable annual harvest volumes attributable to the following:

- stands predominated by Douglas-fir, spruce, or balsam, a maximum of 1,700,000 cubic metres ('non-pine' partition);
- pine species, 1,994,000 cubic metres, with the possibility of an increase to the extent of any under-harvesting in the 'non-pine' partition;
- cedar- or hemlock- leading stands, 200,000 cubic metres;
- harvesting in Pulpwood Agreement (PA) 16, 86,000 cubic metres; and
- deciduous-leading stands outside PA 16, within the Headwaters District, 20,000 cubic metres

### **Factors Influencing the Severity of Attack**

Both fire and insects have historically played an important role in the natural disturbance and replacement of lodgepole pine forests in much of the province's interior. Two key factors contributing to the recent expansion of the mountain pine beetle infestation are the large amounts of older lodgepole pine on the land base and the relatively warm weather conditions experienced in recent years in the interior of the province. Forest management policies, i.e. cutblock size/adjacency and fire control have contributed to an accumulation of old pine forest above historical levels. Once lodgepole pine trees are mature (generally older than 80 years), they are highly susceptible to attack by the pine beetle, particularly during times of prolonged favourable

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weather conditions. Experts concur that moderated climate conditions coupled with the increasing amount of susceptible, mature lodgepole forests has led to the current, unprecedented mountain pine beetle outbreak.

### **Environmental Impacts of the Beetle Infestation**

Large-scale stand replacing disturbances such as those caused by fires and insect outbreaks have been a part of normal ecosystem dynamics in the BC interior, most likely for many thousands of years. However with fire suppression, much more of the province is now occupied by older pine forests than historically has been the case. An epidemic population of mountain pine beetle and an abundance of susceptible mature pine, mean that the rate of conversion from older to younger forested habitats will be increased. Insect attack will be followed by eventual blowdown, or by harvesting to control the rate of spread and salvage the attacked timber. Even with harvesting, both live and dead stands unaltered by harvesting will remain on the landscape with complex consequences for pine forests and associated wildlife habitats in BC's interior.

### **Outlook**

Short of running out of suitable host trees, there is no indication the spread of the MPB infestation will slow significantly without sufficiently cold weather to kill the developing beetle brood. Temperatures need to reach  $-30^{\circ}\text{C}$  in the early Fall or late Spring when the beetles are not fully in their "over-wintering state" or have sustained winter temperatures of less than  $-40^{\circ}\text{C}$  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. Additionally, 30 year and older pine plantations are starting to be impacted by MPB, specifically when adjacent to high beetle populations in the mature pine.

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

## **3.0 Values and Objectives**

The SFM Advisory Group has identified local values and objectives for each of the CSA defined elements. These values and objectives are summarized in this section.

Core Indicators (included in the CSA standard) as well as local indicators and their respective targets have been developed to meet these local values and objectives. SFM Plan indicators (core and local) and their 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 3.

### ***Criterion 1: Biological Diversity***

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

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### Element 1.1: Ecosystem Diversity

Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA.

Description of Local Values	Description of Objectives	Indicators & Targets
Well-balanced ecosystems that support natural processes.	Healthy, connected forest ecosystems with a representation of natural attributes. Retain representation of natural forests.	1.1.1, 1.1.2, 1.1.3, 1.1.4

### Element 1.2: Species Diversity

Conserve species diversity by ensuring that habitats for the native species found in the DFA are maintained through time, including habitats for known occurrences of species at risk.

Description of Local Values	Description of Objectives	Indicators & Targets
Abundance and distribution of habitat to conserve populations of native flora and fauna.	Maintain a variety of habitats for naturally occurring species. Use practices to reduce the spread of invasive plant populations within forested ecosystems.	1.2.1, 1.2.2, 1.2.3, 1.2.4

### Element 1.3: Genetic Diversity

Conserve genetic diversity by maintaining the variation of genes within species and ensuring that reforestation programs are free of genetically modified organisms.

Description of Local Values	Description of Objectives	Indicators & Targets
Sustainable populations of native species.	Maintain or enhance genetic diversity. <ul style="list-style-type: none"><li>▪ Species population</li></ul>	1.3.1, 1.3.2, 1.3.3, 1.3.4

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### **Element 1.4 Protected Areas and Sites of Special Biological and Cultural Significance**

Respect protected areas identified through government processes. Co-operate in broader landscape management related to protected areas and sites of special biological and cultural significance.

Identify sites of special geological, biological, or cultural significance within the DFA, and implement management strategies appropriate to their long-term maintenance.

<b>Description of Local Values</b>	<b>Description of Objectives</b>	<b>Indicators &amp; Targets</b>
Continuing viability of naturally functioning ecosystems in Protected Areas and sites of special biological significance.  Protected areas provide recreational opportunities and managed access.	Protect viable, ecologically important examples of British Columbia's natural diversity.  Endeavor to identify and maintain new areas of biological significance.  Maintain boundary integrity.	1.4.1, 1.4.2

### ***Criterion 2: Forest Ecosystem Condition and Productivity***

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

### **Element 2.1 Forest Ecosystem Resilience**

Conserve ecosystem resilience by maintaining both ecosystem processes and ecosystem conditions.

<b>Description of Local Values</b>	<b>Description of Objectives</b>	<b>Indicators &amp; Targets</b>
Sustainable forest ecosystems.  Conserve, use and manage sustainably	Resilient forest ecosystems with a range of natural attributes. <ul style="list-style-type: none"><li>▪ Age class distribution</li><li>▪ Scale (landscape unit)</li><li>▪ Natural systems (way in which attributes interact)</li><li>▪ All forest types including broad leaf species</li></ul>	2.1.1



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### **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. Reforest promptly and use tree species ecologically suited to the site.

<b>Description of Local Values</b>	<b>Description of Objectives</b>	<b>Indicators &amp; Targets</b>
Conserve forest ecosystem condition and productivity.	Well functioning connected ecosystems that are managed for timber and non-timber forest values.	2.2.1, 2.2.2, 2.2.3

### ***Criterion 3: Soil and Water***

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

### **Element 3.1 Soil Quality and Quantity**

Conserve soil resources by maintaining soil quality and quantity.

<b>Description of Local Values</b>	<b>Description of Objectives</b>	<b>Indicators &amp; Targets</b>
Conservation of soil resources	Maintain productive capacity of forest soils. <ul style="list-style-type: none"><li>▪ Minimize compaction and detrimental disturbance</li></ul>	3.1.1, 3.1.2

### **Element 3.2 Water Quality and Quantity**

Conserve water resources by maintaining water quality and quantity.

<b>Description of Local Values</b>	<b>Description of Objectives</b>	<b>Indicators &amp; Targets</b>
Healthy watersheds that function in a well-balanced natural state.	Acceptable levels of water quality and quantity <ul style="list-style-type: none"><li>▪ Water quality (clean water).</li><li>▪ Water quantity (maintain stream-flow regimes within natural variation)</li></ul>	3.2.1, 1.2.4, 2.2.3

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#### ***Criterion 4: Role in Global Ecological Cycles***

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

#### **Element 4.1 Carbon Uptake and Storage**

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

<b>Description of Local Values</b>	<b>Description of Objectives</b>	<b>Indicators &amp; Targets</b>
Respect natural watershed processes and the intrinsic value of nature. <ul style="list-style-type: none"><li>▪ Actively growing, healthy forests</li><li>▪ Maintain all natural sources of nutrient cycling</li></ul>	Resilient forest ecosystems with a representation of natural attributes. <ul style="list-style-type: none"><li>▪ Age class distribution</li><li>▪ Scale (landscape unit)</li><li>▪ Natural systems (way in which attributes interact)</li></ul>	4.1.1, 2.1.1

#### **Element 4.2 Forest Land Conversion**

Protect forestlands from deforestation or conversion to non-forests, where ecologically appropriate.

<b>Description of Local Values</b>	<b>Description of Objectives</b>	<b>Indicators &amp; Targets</b>
Protection and security of the land and resources for future generations.	Prosperous forest-based industries with a sustainable supply of timber.	2.2.1

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### **Criterion 5: Economic and Social Benefits**

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

#### **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. Evaluate timber and non-timber forest products and forest-based services.

<b>Description of Local Values</b>	<b>Description of Objectives</b>	<b>Indicators &amp; Targets</b>
Diverse use of the forest. <ul style="list-style-type: none"><li>▪ Cultural and heritage</li><li>▪ Wildlife</li><li>▪ Environmental</li><li>▪ Recreational</li><li>▪ Tourism</li></ul> Traditional public use trail systems	Conserve or enhance non-timber values while managing forests for timber values and prosperous forest-based industries	5.1.1

#### **Element 5.2 Communities and Sustainability**

Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies.

<b>Description of Local Values</b>	<b>Description of Objectives</b>	<b>Indicators &amp; Targets</b>
Social and economic stability and vitality of local communities including First Nations Local perspective valued in managing forest resources.	Employment opportunities Economic diversity Local decision making	5.2.1, 5.2.2, 5.2.3, 5.2.4

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**Criterion 6: Society's responsibility**

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

**Element 6.1 Aboriginal and Treaty Rights**

Recognize and respect Aboriginal title and rights and treaty rights. Understand and comply with current legal requirements related to Aboriginal title and rights and treaty rights.

Description of Local Values	Description of Objectives	Indicators & Targets
Aboriginal title and rights and treaty rights	Recognition of aboriginal title and rights and treaty rights as related to forest management	6.1.1, 6.1.2, 6.1.3

**Element 6.2 Respect for Aboriginal Forest Values, Knowledge, and Uses**

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

Description of Local Values	Description of Objectives	Indicators & Targets
Aboriginal rights, title and traditional knowledge are respected.	Protection of important archaeological sites (as interpreted by First Nations) Cultural and heritage sites and values, including spiritual. Use of traditional knowledge Meaningful and informed participation of First Nations.	6.2.1

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### Element 6.3 Forest Community well-being and resilience

Encourage, co-operate with, or help to provide opportunities for economic diversity within the community.

Description of Local Values	Description of Objectives	Indicators & Targets
Stable and profitable local forest industries	Prosperous forest-based industries with access to desired markets.	6.3.1, 6.3.2, 6.3.3

### Element 6.4 Fair and Effective Decision-Making

Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress.

Description of Local Values	Description of Objectives	Indicators & Targets
Public and First Nations values are recognized.	Public and First Nations are invited to participate. Those participating in the process are satisfied with outcomes.	6.4.1, 6.4.2, 6.4.3

### Element 6.5 Information for Decision-Making

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

Description of Local Values	Description of Objectives	Indicators & Targets
Adaptive forest ecosystem management. <ul style="list-style-type: none"><li>▪ Experience and research</li><li>▪ Understanding of policies and procedures</li></ul>	Continual increase in knowledge of ecosystem needs and impacts of management techniques. <ul style="list-style-type: none"><li>▪ Extension</li></ul> Encourage the development of capacity for First Nations and the public to provide informed and meaningful input into the decision making process.	6.5.1, 6.5.2

## 4.0 Indicators and Indicator Matrices

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. This section provides a detailed description of each of the indicators and targets in the SFM Plan for the Kamloops - North Thompson area. Core indicators prescribed within the latest CSA standard (Z809-08) have been integrated into the Plan using the numbering system found within the standard. Many of the previous plan indicators were very close to the set of core indicators, thus the targets used to measure these core indicators are familiar to the SFM Plan. Full conformance is required for many targets i.e., there is no variance. Where full conformance may not be achievable, an acceptable level of variance is indicated for the target.

Licencees monitor the achievement of targets annually. Monitoring procedures for each target in the SFM Plan are described below. Management strategies provide further direction to the performance measures (indicators and targets) and serve as a guide for licencees in their annual monitoring activities. The format individual licencees use to complete annual reporting is shown in Appendix 3.

### **Objectives, Indicators and Targets**

The Kamloops - North Thompson SFM plan process has served to further refine the information and concerns of the local public. Incorporating these concerns and ideas into individual licencee operations through the established performance measures and ongoing monitoring ensures long-term sustainability of the forest resource. Any indicators established in this Sustainable Forest Management Plan that are conducive to long term projections are as noted below.

Section 8.3 describes the plans, policies and management strategies that support the achievement of the targets in the SFM Plan.

### ***Base Line for Indicators***

The primary source of base line information for indicators is the initial monitoring report subsequent to adoption of the indicator. Where existing indicators and targets were used to satisfy a core indicator, the baseline will be identified as that from the previous SFM Plan. In some instances, particularly in the case of newly developed indicators, a baseline might be difficult to establish and thus be absent in the plan. In those situations, baseline information will become available through subsequent monitoring reports.

## 4.0 Indicators and Indicator Matrices

### *Current Status of Indicators*

Current status of each indicator is as reported and updated in annual SFM Plan performance reporting. To obtain current information please refer to the most recent monitoring report on the Kamloops - North Thompson SFM Plan web site [www.kamloopssustainableforestry.ca](http://www.kamloopssustainableforestry.ca).

### **Forecasting**

Forecasts are the long-term projection of expected future indicator levels. These have been incorporated into the SFM Plan targets as predicted results or outcomes for each target. KLRMP forecasting completed to support preparation of the multiple accounts analysis, KLRMP monitoring, and Timber Supply Review reporting, together, support data collection, review and forecasting for targets and indicators.

Forecasting of many of the SFM Plan Indicators and Targets has occurred either indirectly or directly at the provincial or regional level. SFM Plan development has built in this information, often within the indicator and target itself. A strong example of this is the connection between desired outcomes of the KLRMP and SFM Plan forecasts of indicators.

Often, the target for the indicator is in itself the predicted result or outcome. The target is the predicted outcome or forecast for most of the SFM Plan indicators. Generally, the target is being achieved for SFM Plan indicators and it is expected these targets will continue to be met. Indicator forecasts also provide predictions of future state relative to Elements, Values or Objectives.

### *Provincial Forecasting Related to the SFM Plan*

Provincial Level Timber Supply Analysis of regulatory requirements of the Forest Practices Code occurred in February, 1996. The analysis reviewed timber supply impacts of Code requirements related to: riparian management areas, biodiversity at the stand and landscape level, watershed assessment sensitivity, identified wildlife species at risk, soil conservation and visual quality management.

The harvest level impact related to biodiversity and riparian management was based on analysis using the BC Forest Service Simulation Model (FSSIM). Impact assessments related to remaining Code requirements were based on professional estimates. Analysis was then completed at both the provincial and regional levels to determine the short-term effects of the FPC requirements.

### *Regional Forecasting Related to the SFM Plan*

The Kamloops LRMP received approval in principle in May 1995 and was declared as a higher-level plan in January 1996. Prior to approval in principle of the plan, a multiple accounts analysis was completed which assessed the social, economic and environmental impacts of four different Scenarios depicting differing combinations of management alternatives. The analysis assisted KLRMP table members in negotiating the approval in principle.

#### 4.0 Indicators and Indicator Matrices

Where the predictions made in the KLRMP multiple accounts analysis are related directly or indirectly to the indicators of the SFM Plan, they are noted in the forecast section of the related indicator matrix.

The Kamloops Timber Supply Area Rationale for AAC Determination, June 1<sup>st</sup>, 2008, included sensitivity analysis around IRM objectives including those of the KLRMP. The analysis was conducted using information related to the timber harvesting landbase, timber volumes, and management strategies to indicate future state projected out for a period of 400 years. Prior to the Chief Forester making his determination, the public was invited to review and comment on the Timber Supply Review (TSR). Additional information on the opportunities that were provided for public input can be found in the TSR discussion paper (October 2007). Further information pertaining to assumptions and analysis can be found within the Chief Foresters Rationale for AAC Determination for the Kamloops TSA (June 2008).

#### **Legal Requirements**

Awareness of legal requirements is essential when considering suitable Objectives for an Element, and determining appropriate Indicators and Targets. In the following Indicator tables applicable Acts and Regulations are noted in the “Legal Requirements” section. Specific sections/ subsections of these Acts and Regulations have not been identified to avoid having to manage the ongoing changes to forest legislation. Forest licensees ensure that specific legislation related to Objectives, Indicators and Targets is known and complied with by staying current with legal requirements. Subscribing to commercial services, reliance on in house staff or industry associations, participating in joint legislative review committees are just some of the methods used by licensees to remain current with legislation.



## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.1.1 Ecosystem Area by Type</b>
<b>Element(s)</b>	1.1 Ecosystem Diversity
<b>Strategy(s) Description</b>	<p>Ecosystem conservation represents a coarse-filter approach to biodiversity conservation. It assumes that by maintaining the structure and diversity of ecosystems, the habitat needs of various species will be provided. For many species, if the habitat is suitable, populations will be maintained.</p> <p>Ecosystem area by type can be influenced by managers, and many foresters/ecologists prefer to characterize the forest in terms of ecosystem types (according to forest ecosystem classifications) rather than by age and type of structures as derived from classic forest inventories. The biogeoclimatic ecosystem classification (BEC) used throughout BC is an integrated hierarchical classification scheme that combines climate, vegetation and site classifications. Within the Kamloops TSA, BEC mapping has occurred down to the subzone level (a combination of ecological features, primarily climate and physiography). The broad biogeoclimatic (zonal) units are used in such applications as:</p> <ol style="list-style-type: none"> <li>Seed zones</li> <li>Protected area planning</li> <li>Land management planning</li> <li>Forest pest risk</li> <li>Natural disturbance types</li> <li>Wildlife habitat management</li> </ol> <p>This broad classification is used in combination with detailed site information to derive site series classification—a level that provides operational guidance. Common interpretations for each site series include:</p> <ul style="list-style-type: none"> <li>Most suitable tree species for regeneration</li> <li>Stocking, stock type, and ‘free-to-grow’ standards for tree species</li> <li>Vegetation competition after harvesting</li> <li>Site limiting factors, harvest season and reforestation considerations</li> <li>Site index by tree species</li> </ul>
Means of achieving objective and target	BEC mapping has occurred throughout the TSA to the subzone level. Slight changes to the area distribution of these subzones occurs when new data is collected in poorly sampled areas. Climate change may alter representation, particularly drier sites. Licensees ability to influence change is limited.
<b>Forecast; Predicted Results or Outcome</b>	Forest licencees will have access to and utilize BEC data to guide their strategic and operational plans. Licensee operations will not contribute to any change in the presence and representativeness of Biogeoclimatic Zones. (2008 – TSR 4 Baseline data).
Forecast	Healthy ecosystems with a diversity and abundance of native species and habitats. The greatest risk to changes in the presence and representativeness of Biogeoclimatic Zones is climate change. A detailed report on these risks - forecasting how ecological conditions may change over time with a warming climate was prepared for the Kamloops TSA in June, 2009 (Kamloops Future Forest Strategy – June 2009). Impacts were deemed to be greatest in the drier pine and fir BEC subzones (MSxk, IDFdk, IDFxh, PPxh).
<b>Target</b>	<b>1. Maintain the presence and representative area of Biogeoclimatic Zones to the subzone level within the Plan area (new target).</b>
Basis for the Target	The province’s ecological classification system is recognized as world class. Utilizing the BEC classification system and mapping was seen to be the best way to report on the indicator. While licensees have little influence on the presence and representative area of these BEC subzones, the classification system provides tremendous support to both strategic and operational decision making.
Legal Requirements	Use of the BEC classification system is inherent in the Forest and Range Practices Act and the Forest Planning and Practices Regulation.
<b>Monitoring &amp; Measurement Periodic</b>	Part of periodic Timber Supply Review (TSR) - used to define of Analysis Units for timber supply modeling. Licencees will report the area for all Biogeoclimatic subzones as updated for the most current TSR for the TSA. <sup>4</sup> Reporting to occur periodically – in the year following completion of subsequent TSR’s and determination of the allowable annual cut.
Annual	n/a
Variance	None.

<sup>4</sup> The DFA includes the Kamloops TSA and TFL’s 18 and 35. The Kamloops TSA is approximately (95%) the DFA. Targets and reporting are based on Kamloops TSA current status and future forecast.

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.1.2 Forest Area by type or species composition</b>
<b>Element(s)</b>	1.1 Ecosystem Diversity
<b>Strategy(s) Description</b>	Forest area by type is a refinement of the previous indicator – ecosystem area. Tree species composition, stand age, and stand structure are important variables that affect the biological diversity of a forest ecosystem - providing structure and habitat for other organisms. Ensuring a diversity of tree species is maintained improves ecosystem resilience and productivity and positively influences forest health. Reporting on this indicator provides information on area covered by forests, forest succession and management practices that might alter species composition.
Means of achieving objective and target	Maintain broad leaf species through individual tree and patch retention and through natural regeneration in harvested areas. Licencee plans will incorporate strategies that promote multi species regeneration and consider the potential implications of climate change.
<b>Forecast; Predicted Results or Outcome</b>	<u>Target 2</u> Timber Supply Review (TSR II) reports 37,878 hectares of broad leaf species (Table 2) on the land base managed by the Ministry of Forests and Range (2003 baseline data). <u>Target 3</u> Seven-eight percent of the cutblocks declared free growing during the reporting year had three or more tree species. The average of the leading tree species was 54.3% (2006 baseline data).
Forecast	Healthy ecosystems with a diversity of native broadleaf and coniferous species maintained at endemic and sustainable levels. Species composition information is utilized in the Provincial Timber Supply Review.
<b>Target</b>	<b>2.</b> There will be no net loss in the percent of land base for broad leaf species. <b>3.</b> 70 percent of cutblocks harvested will have three or more tree species (includes conifer and deciduous comprising one percent or more of total trees) in the free growing survey.
Basis for the Target	The need to maintain the biological diversity of forest ecosystems in managed second-growth and third-growth forests. Addresses diversity and abundance of naturally occurring tree species on the landscape. Kamloops LRMP guidance.
Legal Requirements	Forest and Range Practices Act, Forest Planning and Practices Regulation
<b>Monitoring &amp; Measurement Periodic</b>	<b>2.</b> Licencees will report the area of broad leaf species as updated for the most current TSR for the TSA. <sup>5</sup> Reporting to occur periodically – in the year following completion of subsequent TSR's and determination of the allowable annual cut.
Annual	<b>3.</b> On areas declared free growing in the reporting year, licencees will use the inventory label to determine areas having 3 or more species (non ESSF) or 2 or more species (ESSF). Licencees will also identify the average percent for the leading species on those areas having 3 or more species.
Variance	5% reduction in broad leaf species (uncontrolled events associated with licencee operations: forest pests etc)

<sup>5</sup> The DFA includes the Kamloops TSA and TFL's 18 and 35. The Kamloops TSA is approximately (95%) the DFA. Targets and reporting are based on Kamloops TSA current status and future forecast.

## 4.0 Indicators and Indicator Matrices

Indicator	1.1.3 Forest area by seral stage or age class
Element(s)	1.1 Ecosystem Diversity
Strategy(s) Description	A balanced age class distribution provides on going habitat opportunities for all forest dwellers, some which occupy forests only when specific habitat attributes are present. Often, these attributes are time sensitive. Balanced age classes also allow for a more even flow of timber values and benefits. A reduction of the current imbalance of mature to over mature stands also reduces forest health risks. Forecasted forest age class distribution over time provides an indication of sustainability. Balanced age classes will result in a larger proportion of hectares in younger faster growing stands with a net carbon intake.
Means of achieving objective and target	Maintain current harvest priority: Forest health management – harvesting attacked and susceptible stands (generally older stands) “Available” stands with the most years beyond culmination (maximum mean annual increment) Immediate implementation.
Forecast; Predicted Results or Outcome	All age classes except age class 1 have less than 8.5% area representation. Age classes 1 to 5 average only 6.3% reflecting the disproportionate area in over mature age classes. (2001 baseline data).
Forecast	Continuation of current harvest priorities will lead to balanced age classes on the available productive forest land. Protected Area, Old Growth Management Area (OGMA), and Wildlife Tree Patch Strategies , together with inaccessible areas, ensure retention of sufficient old growth to sustain biodiversity and ecosystem objectives. Progress to target will be steady: <ul style="list-style-type: none"> <li>▪ In 50 years age classes 1 to 5 average 7.4% and three age classes meet target.</li> <li>▪ Target will be achieved within 100 years</li> </ul>
Target	4. Progress towards a stable forest age class distribution on the timber harvesting land base where each age class to 100 years old [1 (1 to 20), 2 (21-40), 3 (41-60), 4 (61 to 80) and 5 (81 to 100)] occupies at least 8.5% of the timber harvesting land base. Three age classes meet this target within 50 years.
Basis for the Target	Relatively even flow of value to industry and the community
Legal Requirements	NA
Monitoring & Measurement Periodic	Licencee report the current age class distribution as last reported by a Timber Supply Review <sup>6</sup> Reporting to occur periodically – in the year following completion of subsequent TSR's and determination of the allowable annual cut. Current status and future forecast of age class distribution is provided as part of Timber Supply Review completed periodically.
Annual	
Variance	Three age classes meet this target within 70 years (attaining age class sooner than 50 years seen as a benefit).

<sup>6</sup> The DFA includes the Kamloops TSA and TFL's 18 and 35. The Kamloops TSA is approximately (95%) the DFA. Targets and reporting are based on Kamloops TSA current status and future forecast.

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.1.4 Degree of within-stand structural retention or age class</b>
<b>Element(s)</b>	1.1 Ecosystem Diversity
<b>Strategy(s) Description</b>	<p>Complexity of stand structure is a key component of an operational strategy to sustain biodiversity in forested ecosystems (Bunnell et al 1999). Structural complexity helps to mitigate the potential deleterious effects of large scale stand and landscape simplification associated with intensive short-rotation forest management. It can be provided by the adoption of retention silvicultural systems, a practice broadly applied in interior BC (Lindenmayer and Franklin 2003, Bunnell et al. 1999).</p> <p>Wildlife tree patches (WTPs) are a retention tool recommended for use in stand and landscape planning to help sustain biodiversity and ecological processes. They are used to provide protection for known wildlife habitat features (including standing dead and dying trees), to provide attributes important to key ecological processes (including woody debris, tree species diversity, and understory vegetation diversity), to protect small, local habitat features (i.e. unclassified riparian or wetlands, rock outcrops or rare plants or ecosystems), or to provide stand level complexity (vertical and horizontal) to harvest areas under even-aged, short rotation management. At the landscape level WTPs can be used with OGMA's to provide landscape structure to help keep landscape complexity more consistent with natural disturbance regimes.</p> <p>Operationally retention of wildlife trees/stubs in cutblocks is subject to worker safety considerations as specified in the WorkSafe BC requirements for wildlife and danger trees. Note that wildlife tree patches may be located outside of cutblocks, along their edge, and still be consistent with provincial policy on wildlife tree retention. Where wildlife tree stubs are left, they should form only one part of the stand level tree retention found on a cutblock.</p>
<b>Means of achieving objective and target</b>	<p>Companies will achieve targets through allocation of WTPs and dispersed retention (individual trees and stubs) during forest development planning. Company plans and practices support retention and protection of designated wildlife trees/stubs (e.g. use of no work zones, etc vs felling at the silviculture stage where appropriate).</p> <p>Harvest value and ecological value can be optimized by selecting the variety of tree types (e.g., species, size, live and dead, etc.) that have high ecological value and low economic value, and through the number of trees retained. An over reliance on stubs will be avoided. While suitable stubs provide some benefits, retention should be primarily WT's and WTPs.</p> <p>If a licensee identifies a unique feature (e.g. nesting site, rare habitat, unique landform, etc.) at anytime, best efforts will be made to incorporate the feature into planned operations.</p>
<b>Forecast; Predicted Results or Outcome</b>	Ninety-one percent of harvested cutblocks greater than 10 hectares in size had Wildlife Tree Patches (WTP's) and/or individual leave trees (WT)/stubs identified in operational plans. Of these, 79% had dispersed individual trees, stubs or small patches retained. (2007 baseline data)
<b>Forecast</b>	Healthy ecosystems with a diversity and abundance of native species and habitats. Majority of harvested areas (at least 4/5) will have habitat attributes that will help to sustain biodiversity and ecological processes.
<b>Target</b>	<p><b>5a.</b> 80 percent of cutblocks greater than 10 hectares will have individual wildlife trees/stubs and/or wildlife tree patches within the block.</p> <p><b>5b.</b> Of the blocks that have individual wildlife trees/stubs and/or wildlife tree patches; at least 50 percent of the time these blocks will have dispersed individual trees, stubs or small (&lt;0.25 ha) patches retained.</p> <p>Objectives for location of WTPs include:</p> <ol style="list-style-type: none"> <li>1. Inclusion of as broad a representation of site types as possible</li> <li>2. WTPs are anchored on any District listed wildlife habitat features where they occur</li> <li>3. WTPs are preferentially anchored on classified and unclassified riparian areas where they occur</li> </ol> <p>Desirable characteristics for stub trees include:</p> <ol style="list-style-type: none"> <li>1. Dead or defective trees (particularly if defects exist in the lower bole of the tree).</li> <li>2. Larger diameter trees that are more suitable for nesting</li> </ol>
<b>Basis for the Target</b>	Recommended best practice. Target designed to offer diversity in approach (varying size, location, presence of Wildlife Tree Patches or Wildlife Trees), Kamloops TSA MPB Strategy (March 2006)
<b>Legal Requirements</b>	Forest and Range Practices Act, Forest Planning and Practices Regulation

## 4.0 Indicators and Indicator Matrices

<b>Monitoring &amp; Measurement</b> Periodic	n/a
Annual	<p><b>5a.</b> Licencees will report, for cutblocks greater than 10 hectares, the number of cutblocks with wildlife tree patches and/or individual trees/stubs within the cutblock versus the total number of cutblocks greater than 10 ha in size upon completion of harvest, during the reporting year.</p> <p><b>5b.</b> On the blocks that do have individual wildlife trees/stubs and/or associated wildlife tree patches, licencees will also report the percentage of blocks that had dispersed individual trees, stubs or small (&lt;0.25 ha) patches. Reporting against target "b" is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.</p>
Variance	For Targets a and b: 10%

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.2.1 Degree of habitat protection for selected focal species, including species at risk<sup>7</sup></b>
<b>Element(s)</b>	1.2 Species Diversity
<b>Strategy(s) Description</b>	While ecosystem conservation is the coarse-filter approach to biodiversity management, species diversity is the fine-filter approach. For most species, forest managers can influence habitat only, not species populations. To account for the degree of habitat protection for selected focal species, including species at risk, this indicator looks at short-term habitat needs, particularly for critical and core habitats. Licencees track critical species using the data base at the Conservation Data Centre. List will include provincial “blue” listed species and species deemed at risk from both the provincial and federal list.
<b>Means of achieving objective and target</b>	<p>Licencees will achieve the strategy by fully supporting and implementing: Government’s policy and legally established framework for the protection of biodiversity values and species at risk under the Forest and Range Practices Act, the Land Act (Kamloops LRMP Higher Level Plan (HLP)), and the Wildlife Act and Amendments, the Park Act and the Integrated Pest Management Act. This government framework includes the establishment of parks and protected areas, the protection of biodiversity, riparian and aquatic habitats, old-growth forests, ungulate winter range, specific wildlife features and the habitat for listed species at risk. Legal requirements the licencees adhere to include:</p> <ol style="list-style-type: none"> <li>1. Section 7 (FPPR) notice requirements until such time that all required Wildlife Habitat Areas have been approved by government.</li> <li>2. Legally established Objectives and/or General Wildlife Measures for approved Ungulate Winter Range and Wildlife Habitat Areas.</li> <li>3. Objectives, strategies and practices for: a) riparian area management b) wildlife tree retention; c) coarse woody debris, and d) old growth management, as specified in approved Forest Stewardship Plans.</li> <li>4. TSA licencee obligations established under the KLRMP HLP and the Government Action Regulations.</li> </ol> <p>Additional voluntary actions that TSA licencees deem to be necessary for the protection of biodiversity, species at risk and the integrity of parks and protected areas, where such actions are not required under #1 above. In addition to targets below, actions include:</p> <ol style="list-style-type: none"> <li>a. Consideration of decision support tools such as published guidelines and best management practices, use of available wildlife, fish and habitat inventories etc.</li> <li>b. Seeking expert advice from professional biologists.</li> <li>c. Valuing advice and suggested actions brought forward by stakeholders and First Nations within the TSA.</li> <li>d. Conformance to strategies in licencee plans to protect a Wildlife Habitat Feature.</li> <li>e. Achieve 100% conformance with interim agreements, as endorsed by the Province and TSA licencees, respecting: a) Recovery Action Plan; b) revisions to the location of ungulate winter range and appropriate practices within these areas. These interim agreements will expire once the ungulate winter ranges and associated General Wildlife Measures are legally approved by government.</li> </ol>
<b>Forecast; Predicted Results or Outcome</b>	<p><b>Target 6.</b> Red listed species location were determined by 94% of licensees; where occurrence of critical habitat known, operations were 100% consistent with plans; licensees participated in the Caribou recovery process (2007 baseline data).</p> <p><b>Target 7.</b> All 5 licensees adhered to the management strategies for Mountain Caribou (2000 baseline data).</p>
<b>Forecast</b>	<p>Full compliance with all applicable laws governing forest planning and practices. Adoption and use of best available information and guidelines will provide an effective means for protecting biodiversity and species at risk. Within the current rotation, licencees face a number of significant challenges with respect to the protection of biodiversity and species at risk. The mountain pine beetle outbreak, for example, will certainly result in the loss of mature forested habitat for biodiversity in general, as well as habitat for species at risk. Licencees forest planning and practices promote a diversity of healthy ecosystems while maintaining “rare” attributes as well as a diversity and abundance of naturally occurring wildlife and their habitats. Through proposed protected areas and management guidelines for modified harvest zones, critical habitat for Mountain Caribou will receive a higher level of preservation.</p>

<sup>7</sup> List as provided by the Conservation Data Centre (for instructions on accessing the current list go to the TSA SFM website: <http://thompsonokanagansustainableforestry.ca/documents.htm> )

## 4.0 Indicators and Indicator Matrices

<b>Target</b>	<p><b>6.</b> Proactive habitat protection targets established in accordance with non-legally binding guidelines and best practices:</p> <ul style="list-style-type: none"> <li>• On an annual basis, obtain from the Conservation Data Centre, the location of known Red-listed or Blue-listed species within the TSA.</li> <li>• Where there is a documented, mapped (GPS/UTM) and field verified occurrence of a critical habitat feature (e.g. den, lick, nest) for a Red-listed or Blue-listed species operations achieve 100% consistency with SP measures deemed necessary by a TSA licensee to prevent adverse harm.</li> <li>• Based on the potential level of impact to the TSA, participate in the consultation process led by the Ministry of Environment and the Ministry of Forests and Range, in the identification of Ungulate Winter Range and Wildlife Habitat Areas and the development of General Wildlife Measures.</li> </ul> <p><b>7.</b> Manage Mountain Caribou habitat so it is fully consistent with Government Action Regulation orders and/or higher level plan orders.</p>
Basis for the Target	Legal obligations, use of best available information and application of resource stewardship principles. Strategies to assist in the protection of biodiversity and species at risk have been included as regulatory requirements. Under FRPA, the licensees are required to indicate results and strategies to manage objectives set by government for wildlife (including species at risk) and for biodiversity at the stand and landscape levels.
Legal Requirements	Forest and Range Practices Act; Forest Planning and Practices Regulation; Government Actions Regulation; Wildlife Act.
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	<p><b>Target 6</b></p> <p>a. Licensees report yes/no as to whether target achieved.</p> <p>b. Licensees report the number of cutblocks where there is a documented, mapped (GPS/UTM) and field verified occurrence of a critical habitat feature (e.g. den, lick, nest) for a Red-listed or Blue-listed species and the number of these cutblocks where 100% consistency with SP measures, deemed necessary to prevent adverse harm, were achieved. Reporting against the target is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.</p> <p>c. Licensees summarize applicable consultation processes they participated in.</p> <p><b>Target 7</b></p> <p>Licensees will report the area (ha) harvested that is consistent with Government Action Regulation orders and/or higher level plan orders against all of the area harvested within the designated Mountain Caribou recovery strategy during the reporting year.</p>
Variance	None, other than what is provided for within the legal framework (statutory decision makers may approve variances from standard requirements provided adequate rationale is provided and long-term objectives continue to be met).

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk<sup>8</sup></b>
<b>Element(s)</b>	1.2 Species Diversity
<b>Strategy(s) Description</b>	While ecosystem conservation is the coarse-filter approach to biodiversity management, species diversity is the fine-filter approach. For most species, forest managers can influence habitat only, not species populations. To account for the degree of habitat protection for selected focal species, including species at risk, this indicator looks at more long term habitat needs, particularly for critical and core habitats.
<b>Means of achieving objective and target</b>	Licencees will achieve the strategy by fully supporting and implementing: Government's policy and legally established framework for the protection of biodiversity values and species at risk under the Forest and Range Practices Act and Regulations, the Wildlife Act and Amendments, and the Park Act. This government framework includes the establishment of parks and protected areas, the protection of biodiversity, riparian and aquatic habitats, old-growth forests, ungulate winter range, specific wildlife features and the habitat for listed species at risk. It also includes specific habitat commitments for Mountain Caribou with the goal of restoring the provincial population to 2500 animals within 20 years (2007). Focal species identified and managed for long term habitat requirements include Flammulated Owl, Interior Western Screech Owl, Lewis's Woodpecker, Spotted Bat, and Badger. These species and long term habitat requirements were first identified in government's FPPR Section 7 notices. Additionally, the Mountain Caribou Recovery Implementation Plan identified long term habitat protection within the Well Gray Thompson Planning Unit to be 429,004 ha. Orders to restrict harvesting on an additional 5,937 ha of area of forest within the Timber Harvesting Land Base (THLB) were issued in December, 2008 as well as requirements to locate 1800 ha of high suitability habitat within the modified harvest zone (Government Action Regulation Order u-3-004).
<b>Forecast; Predicted Results or Outcome</b>	<b>Target 8</b> Conserve or manage a set amount of habitat in a condition suitable for the survival of the following focal species: Flammulated Owl, Interior Western Screech Owl, Lewis's Woodpecker, Spotted Bat, and Badger. As this is a new target, 2010 Monitoring Report results will be used to establish the baseline data. Existing Wildlife Habitat Areas already provide enough suitable habitat to accommodate some of the focal species. <b>Target 7</b> All 5 licensees adhered to the management strategies for Mountain Caribou (2000 baseline data).
<b>Forecast</b>	Long term supply of critical habitat for all focal species (Flammulated Owl, Interior Western Screech Owl, Lewis's Woodpecker, Spotted Bat, Badger and Mountain Caribou) resulting in stable populations. Full compliance with all applicable laws governing forest planning and practices. Adoption and use of best available information and guidelines will provide an effective means for protecting biodiversity and species at risk. Licencees may be challenged to meet the desired amount of critical habitat for the selected focal species where mature forested habitat is desired, particularly in pine forests that have been severely impacted by the Mountain Pine Beetle. Through proposed protected areas and management guidelines for modified harvest zones, critical habitat for Mountain Caribou will receive a higher level of preservation.
<b>Target</b>	<b>8.</b> Conserve or manage within the Kamloops TSA the following amounts of habitat for selected focal species (listed below) by retaining 100% of the amount of habitat (provided for in government's FPPR Section 7 notice) in a condition suitable for the survival of the species: Flammulated Owl – 3300 ha Interior Western Screech Owl – 60 ha Lewis's Woodpecker – 650 ha Spotted Bat – 120 ha Badger – 35 ha <b>7.</b> Manage Mountain Caribou habitat so it is fully consistent with Government Action Regulation orders and/or higher level plan orders.
<b>Basis for the Target</b>	Habitat supply modeling done at the provincial/regional level for each of the focal species. More detail provided within the specific GAR orders and determinations.
<b>Legal Requirements</b>	Forest and Range Practices Act; Forest Planning and Practices Regulation; Government Actions Regulation; Wildlife Act.
<b>Monitoring &amp; Measurement Periodic</b>	

<sup>8</sup> List as provided by the Conservation Data Centre (for instructions on accessing the current list go to the TSA SFM website: <http://thompsonokanagansustainableforestry.ca/documents.htm> )



## 4.0 Indicators and Indicator Matrices

Annual	<p><b>8.</b> Licensees will report on the number of ha of suitable habitat they have conserved or managed for each of the focal species. At the TSA level, hectares of Wildlife Habitat Areas will be reported by focal species.</p> <p><b>7.</b> Licensees will report the area (ha) harvested that is consistent with Government Action Regulation orders and/or higher level plan orders against all of the area harvested within the designated Mountain Caribou recovery strategy during the reporting year.</p>
Variance	None, other than what is provided for within the legal framework (statutory decision makers may approve variances from standard requirements provided adequate rationale is provided and long-term objectives continue to be met).

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.2.3 Proportion of regeneration comprised of native species.</b>
<b>Element(s)</b>	1.2 Species Diversity
<b>Strategy(s) Description</b>	<p>One of the objectives of the Kamloops LRMP is to conserve the diversity and abundance of native species and their habitats. This objective aligns very well with the SFM Plan objective to maintain a variety of habitats for naturally occurring species. Silviculture practices that promote regeneration of native species, either through planting or other natural programs assist in meeting these objectives.</p> <p>Considerable effort has been made within the province to map biogeoclimatic zones, subzones and variants. Management interpretations including the preferred and acceptable commercial tree species have been developed for all zones. The mapped zones and interpretations are periodically reviewed and updated with new information such as that developed by the Kamloops Future Forest Strategy (incorporating climate change forecasts into changing future ecological conditions).</p>
<b>Means of achieving objective and target</b>	Licencee plans will contain reforestation prescriptions that ensure that naturally occurring species are planted. This information is contained within the stocking standards of their Forest Stewardship Plans.
<b>Forecast; Predicted Results or Outcome</b>	Where planting is prescribed, native species will be planted on all areas following harvest. As this is a new target, 2010 Monitoring Report results will be used to establish the baseline data.
<b>Forecast</b>	<p>Diversity and abundance of naturally occurring tree species on the landscape. Native species are maintained at endemic and sustainable levels.</p> <ul style="list-style-type: none"> <li>▪ Species composition information is utilized in the Provincial Timber Supply Review.</li> </ul>
<b>Target</b>	<b>9.</b> 100% of trees planted will conform to plan commitments related to the species requirements within approved stocking standards (requires reforestation with commercially valuable and ecologically suitable tree species).
<b>Basis for the Target</b>	Demonstrate that reforestation performance meets the objectives of the KLRMP and the KSFM Plan.
<b>Legal Requirements</b>	Forest and Range Practices Act; Forest Planning and Practices Regulation.
<b>Monitoring &amp; Measurement</b>	
<b>Periodic</b>	
<b>Annual</b>	Licencees will report the number of hectares where trees were planted with species appropriate to the site as outlined in the stocking standards of their Forest Stewardship Plan. Additionally, licensees will report the total number of hectares where planting occurred.
<b>Variance</b>	None, other than what is provided for within the legal framework (statutory decision makers may approve variances from standard requirements provided adequate rationale is provided and long-term objectives continue to be met).

#### 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.2.4 Number of months for road cut and fill slope seeding application (non core indicator)</b>
<b>Element(s)</b>	1.2 Species Diversity, 3.2 Water Quality and Quantity
<b>Strategy(s) Description</b>	Prompt revegetation of road cuts and fill slopes will minimize potential for soil movement and sedimentation. This will contribute to maintenance of water quality and long-term productivity of the land. And also help to control the spread of invasive plants – the second SFM Plan objective under Species Diversity. Certified seed has a higher assurance of pure seed without contaminants.
Means of achieving objective and target	Timely revegetation of exposed soils on newly constructed road cut and fill slopes is completed per licensee plans.
<b>Forecast; Predicted Results or Outcome</b>	Road cuts and fill slopes were seeded or planted on average within 3.4 months of disturbance, compared to a target of 12 months (2000 baseline data).
Forecast	Timely revegetation of exposed soils on newly constructed road cut and fill slopes will reduce the potential for soil movement and sedimentation thereby contributing to the maintenance of water quality. Application of certified grass seed will reduce invasive plant establishment.
<b>Target</b>	<b>10.</b> All planned road cut and fill slope seeding application carried out using certified seed and within 12 months of completed road construction on suitable sites
Basis for the Target	Legal Requirements. Reduce soil erosion and sedimentation of streams, and reduce invasive plant establishment.
Legal Requirements	Forest and Range Practices Act, Forest Planning and Practices Regulation
<b>Monitoring &amp; Measurement</b>	
Periodic	
Annual	Licencees will report the use of certified seed and the average time for road cut and fill slope seeding application on areas of new road construction during the reporting year.
Variance	3 months

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.3.1 Management strategies for rare ecosystems<sup>9</sup> (non-core indicator)</b>
<b>Element(s)</b>	1.3 Genetic Diversity
<b>Strategy(s) Description</b>	<p>Rare ecosystems are frequently identified as focal points for conservation concern. Provincially, ecosystems are listed based largely on frequency of occurrence or rarity. There are at least three broad reasons for creating local lists:</p> <ul style="list-style-type: none"> <li>• to help assess the status of an ecosystem throughout a planning area;</li> <li>• to focus attention and tracking on ecosystems that merit conservation concern; and</li> <li>• to help rank allocation of resources to conservation efforts, such as parks, Wildlife Habitat Areas, Old Growth Management Areas (OGMA's) or Wildlife Tree Patches (WTPs), (Bunnell et al 2004).</li> </ul> <p>Location of potentially rare ecosystems is unlikely to be facilitated by Terrestrial Ecosystem Mapping or Predictive Ecosystem Mapping as they do not map at a scale sufficient to detect rare site series. Consequently, the strategy will be applied at the stand level through identification of rare sites in the SP process and through the application of retention (see Indicator 1.1.4).</p>
<b>Means of achieving objective and target</b>	<p>Protected areas are identified on Licencee maps</p> <p>BEC variants have been prioritized for rare ecosystem assessment based on the following;</p> <ol style="list-style-type: none"> <li>a. number of CDC listed rare ecosystems (Red-listed ecological communities) within the variant,</li> <li>b. the proportion of the provincial extent of the BEC variant in the TSA and</li> <li>c. the proportion of the BEC variant in the TSA that is in the Non-THLB.</li> </ol> <p>For those prioritized BEC variants/site series with Red-listed ecological communities higher levels of WTPs and OGMA's<sup>10</sup> will be planned (i.e. beyond legislation and policy targets). WTPs or other reserves will favor older seral stages.</p> <p>For the remaining BEC variants/site series lower levels of WTPs and OGMA's will be planned (i.e. below legislation and policy targets).</p> <p>Retention to protect rare ecosystems should be designed to complement the existing Non-THLB reserves wherever possible.</p> <p>If a licensee identifies a rare ecosystem at anytime, best efforts will be made to incorporate the ecosystem into planned operations.</p>
<b>Forecast; Predicted Results or Outcome</b>	Out of 280 cutblocks harvested (with original SP's signed after January 1 <sup>st</sup> 2007) there were two instances where documented Red-listed communities occurred and in both cases (100%) the substantial part of the identified occurrence was included in WTP's (2007 baseline data).
<b>Forecast</b>	<p>A diversity of ecosystems while maintaining "rare" attributes, as well as a diversity and abundance of naturally occurring wildlife and their habitats.</p> <p>Through proposed protected areas and management guidelines for low intensity zones rare habitats will receive a higher level of preservation.<sup>11</sup></p>
<b>Target</b>	<p><b>11.</b> Prioritized Red-listed ecological communities will be protected with retained existing forest.</p> <ol style="list-style-type: none"> <li>a. Where the ecological community is "documented, mapped (GPS/UTM) and field verified" for the cutting permit or TSL area where operations are being planned and: <ol style="list-style-type: none"> <li>I. the ecological community represents less than 10% of the cutting permit or TSL area, then the majority of the identified occurrence is protected.</li> <li>I. the ecological community is greater than 10% of the gross area of either tenure noted above, then WTP placement will be weighted towards those communities.</li> </ol> </li> <li>b. Where the ecological community is not well documented (i.e. ecological mapping at the site series level is not available), the prioritized list of Red-listed ecological communities is used as a support tool to weight WTP placement, or other reserves, to the applicable site series in the block</li> </ol>
<b>Basis for the Target</b>	Proactive measure to identify and conserve Red-listed ecological communities
<b>Legal Requirements</b>	Forest and Range Practices Act, Operational Planning and Practices Regulation
<b>Monitoring &amp; Measurement Periodic</b>	

<sup>9</sup> Refer to Appendix 5 for a list and description of prioritized red listed ecological communities

<sup>10</sup> Recognizing there is potential to move OGMA's to include red or blue listed ecosystems.

<sup>11</sup> KLRMP document "Assessment of the Kamloops LRMP Recommendation"; Feb 1995

## 4.0 Indicators and Indicator Matrices

Annual	<p>a. Licencees report the number of cutblocks where occurrence of ecosystems identified as “prioritized Red-listed ecological communities” was “documented”, and the number of these cutblocks where the Target was met.</p> <p>b. Licencees report the number of cutblocks where non-documented ecosystems identified as “prioritized Red-listed ecological communities” occurred, and the number of these cutblocks where the Target was met. A rationale is provided for each cutblock where the Target is not met.</p> <p>Reporting against the targets is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.</p>
Variance	<p>a. None</p> <p>b. Target to be met on at least 90% of cutblocks where ecosystems identified as “prioritized Red-listed ecological communities” occurred.</p>

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.3.2 Identification and protection of wildlife (mammals, birds, reptiles, fish and amphibians) at risk<sup>12</sup> (non-core indicator)</b>
<b>Element(s)</b>	1.3 Genetic Diversity
<b>Strategy(s) Description</b>	The intent of this indicator is to ensure that not only all measures required by law are addressed, but also, reasonable voluntary actions that are deemed necessary by licencees, are implemented during forest planning and practices for the protection of biodiversity and species at risk.
<b>Means of achieving objective and target</b>	<p>Licencees will achieve the strategy by fully supporting and implementing: Government's policy and legally established framework for the protection of biodiversity values and species at risk under the Forest and Range Practices Act, the Land Act (Kamloops LRMP Higher Level Plan (HLP)), the Wildlife Act and Amendments, the Park Act and the Integrated Pest Management Act. This government framework includes the establishment of parks and protected areas, the protection of biodiversity, riparian and aquatic habitats, old-growth forests, ungulate winter range, specific wildlife features and the habitat for listed species at risk.</p> <p>Legal requirements the licencees adhere to include:</p> <ol style="list-style-type: none"> <li>Section 7 (FPPR) notice requirements until such time that all required Wildlife Habitat Areas have been approved by government.</li> <li>Legally established Objectives and/or General Wildlife Measures for approved Ungulate Winter Range and Wildlife Habitat Areas.</li> <li>Objectives, strategies and practices for: a) riparian area management b) wildlife tree retention; c) coarse woody debris, and d) old growth management, as specified in approved Forest Stewardship Plans.</li> <li>TSA licencee obligations established under the KLRMP HLP. <ul style="list-style-type: none"> <li>The Integrated Pest Management Act and Regulations as well as commitments made in a Pest Management Plan.</li> </ul> </li> </ol> <p>Additional voluntary actions that TSA licencees deem to be necessary for the protection of biodiversity, species at risk and the integrity of parks and protected areas, where such actions are not required under #1 above. In addition to targets below, actions include:</p> <ol style="list-style-type: none"> <li>Consideration of decision support tools such as published guidelines and best management practices, use of available wildlife, fish and habitat inventories etc.</li> <li>Seeking expert advice from professional biologists.</li> <li>Valuing advice and suggested actions brought forward by stakeholders and First Nations within the TSA.</li> <li>Conformance to strategies in licencee plans to protect a Wildlife Habitat Feature.</li> <li>Achieve 100% conformance with interim agreements, as endorsed by the Province and TSA licencees, respecting: a) Recovery Action Plan; b) revisions to the location of ungulate winter range and appropriate practices within these areas. These interim agreements will expire once the ungulate winter ranges and associated General Wildlife Measures are legally approved by government.</li> </ol>
<b>Forecast; Predicted Results or Outcome</b>	Red listed species location were determined by 94% of licensees; where occurrence of critical habitat known, operations were 100% consistent with plans; licensees participated in the Caribou recovery process (2007 baseline data).
<b>Forecast</b>	Full compliance with all applicable laws governing forest planning and practices. Adoption and use of best available information and guidelines will provide an effective means for protecting biodiversity and species at risk. Within the current rotation, licencees face a number of significant challenges with respect to the protection of biodiversity and species at risk. The mountain pine beetle outbreak, for example, will certainly result in the loss of mature forested habitat for biodiversity in general, as well as habitat for species at risk. Licencees forest planning and practices promote a diversity of healthy ecosystems while maintaining "rare" attributes as well as a diversity and abundance of naturally occurring wildlife and their habitats.
<b>Target (also used for indicator 1.2.1)</b>	<p><b>6.</b> Proactive habitat protection targets established in accordance with non-legally binding guidelines and best practices:</p> <ul style="list-style-type: none"> <li>On an annual basis, obtain from the Conservation Data Centre, the location of known Red-listed or Blue-listed species within the TSA.</li> <li>Where there is a documented, mapped (GPS/UTM) and field verified occurrence of a critical habitat feature (e.g. den, lick, nest) for a Red-listed or Blue-listed species operations achieve 100% consistency with SP measures deemed necessary by a TSA licencee to prevent adverse harm.</li> <li>Based on the potential level of impact to the TSA, participate in the consultation process led by the Ministry of Environment and the Ministry of Forests and Range, in the identification of Ungulate Winter Range and Wildlife Habitat Areas and the development of General Wildlife Measures.</li> </ul>
<b>Basis for the Target</b>	Legal obligations, use of best available information and application of resource stewardship principles. Strategies to assist in the protection of biodiversity and species at risk have been included as regulatory requirements. Under FRPA, the licencees are required to indicate results and strategies to manage objectives set by government for wildlife (including species at risk) and for biodiversity at the stand and landscape levels.

<sup>12</sup> Refer to Appendix 2

## 4.0 Indicators and Indicator Matrices

Legal Requirements	Forest and Range Practices Act; Forest Planning and Practices Regulation; Government Actions Regulation; Wildlife Act.
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Proactive targets established in accordance with non-legally binding guidelines and best practices: <ul style="list-style-type: none"> <li>a. Licencees report yes/no as to whether target achieved.</li> <li>b. Licencees report the number of cutblocks where there is a documented, mapped (GPS/UTM) and field verified occurrence of a critical habitat feature (e.g. den, lick, nest) for a Red-listed or Blue-listed species and the number of these cutblocks where 100% consistency with SP measures, deemed necessary to prevent adverse harm, were achieved. Reporting against the target is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.</li> <li>c. Licencees summarize applicable consultation processes they participated in.</li> </ul>
Variance	None, other than what is provided for within the legal framework (statutory decision makers may approve variances from standard requirements provided adequate rationale is provided and long-term objectives continue to be met).

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.3.3 Percent of land base for broad leaf species (non-core indicator)</b>
<b>Element(s)</b>	1.3 Genetic Diversity
<b>Strategy(s) Description</b>	Tree species composition, stand age, and stand structure are important variables that affect the biological diversity of a forest ecosystem - providing structure and habitat for other organisms. Ensuring a diversity of tree species is maintained improves ecosystem resilience and productivity and positively influences forest health.
Means of achieving objective and target	Maintain broad leaf species through individual tree and patch retention and through natural regeneration in harvested areas.
<b>Forecast; Predicted Results or Outcome</b>	Timber Supply Review (TSR II) reports 37,878 hectares of broad leaf species (Table 2) on the land base managed by the Ministry of Forests and Range (2003 baseline data).
Forecast	Healthy ecosystems with a diversity of native broadleaf and coniferous species maintained at endemic and sustainable levels.
<b>Target</b> (also used for indicator 1.1.2)	<b>2.</b> There will be no net loss in the percent of land base for broad leaf species.
Basis for the Target	The need to maintain the biological diversity of forest ecosystems in managed second-growth and third-growth forests. Addresses diversity and abundance of naturally occurring tree species on the landscape. Kamloops LRMP guidance.
Legal Requirements	Forest and Range Practices Act, Forest Planning and Practices Regulation
<b>Monitoring &amp; Measurement</b>	Licencees will report the area of broad leaf species as updated for the most current TSR for the TSA. <sup>13</sup> Reporting to occur periodically – in the year following completion of subsequent TSR's and determination of the allowable annual cut.
Periodic	
Annual	
Variance	5% reduction in broad leaf species (uncontrolled events associated with licensee operations: forest pests etc)

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<sup>13</sup> The DFA includes the Kamloops TSA and TFL's 18 and 35. The Kamloops TSA is approximately (95%) the DFA. Targets and reporting are based on Kamloops TSA current status and future forecast.



## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.3.4 Percent of harvested cutblocks having three or more tree species identified in the free growing inventory (non-core indicator)</b>
<b>Element(s)</b>	1.3 Genetic Diversity
<b>Strategy(s) Description</b>	An objective of the Kamloops LRMP, with respect to ecosystem management is to maintain viable populations of all species across the landscape within their existing geographic range. Ensuring a diversity of tree species is maintained improves ecosystem resilience and productivity and positively influences forest health.
Means of achieving objective and target	Licencee plans will incorporate strategies that promote multi species regeneration and consider the potential implications of climate change.
<b>Forecast; Predicted Results or Outcome</b>	Seven-eight percent of the cutblocks declared free growing during the reporting year had three or more tree species. The average of the leading tree species was 54.3% (2006 baseline data).
Forecast	Healthy ecosystems with a diversity of native broadleaf and coniferous species maintained at endemic and sustainable levels. Species composition information is utilized in the Provincial Timber Supply Review.
<b>Target</b>	<b>3.</b> On areas declared free growing in the reporting year, licencees will use the inventory label to determine areas having 3 or more species (non ESSF) or 2 or more species (ESSF). Licencees will also identify the average percent for the leading species on those areas having 3 or more species.
Basis for the Target	The need to maintain the biological diversity of forest ecosystems in managed second-growth and third-growth forests. Addresses diversity and abundance of naturally occurring tree species on the landscape. Kamloops LRMP guidance.
Legal Requirements	<a href="#">Forest And Range Practices Act</a> , Forest Planning And Practices Regulation
<b>Monitoring &amp; Measurement</b>	
Periodic	
Annual	On areas declared free growing in the reporting year, licencees will use the inventory label to determine areas having 3 or more species. Licencees will also identify the average percent for the leading species on those areas having 3 or more species.
Variance	None

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.4.1 Proportion of identified sites with implemented management strategies</b>
<b>Element(s)</b>	1.4 Protected Areas and Sites of Special Biological and Cultural Significance.
<b>Strategy(s) Description</b>	<p>The forest licencees participated in the Kamloops LRMP that delineated a series of protected areas with the TSA. This achieved the geographic and ecological goals of the provincial Protected Areas Strategy, providing representation of the cross-section of ecosystems. Logging, mining and hydroelectric development are generally not permitted within protected areas and other resource development activities such as grazing and commercial tourism development, are permitted only in specified areas and under strict guidelines.</p> <p>Targets for this indicator include sites identified primarily for their cultural significance as well as sites identified primarily for their biological/ecological significance.</p> <p>Archeological Overview Assessments (AOAs) and inventories assess the potential for occurrence of cultural heritage resources and direct more detailed assessments in areas of moderate or high potential where forestry operations are planned. A revised model is incorporating improved information provided by First Nations and detailed assessments completed based on the previous model.</p> <p>Rare ecosystems are frequently identified as focal points for conservation concern. Provincially, ecosystems are listed based largely on frequency of occurrence or rarity. There are at least three broad reasons for creating local lists:</p> <ul style="list-style-type: none"> <li>• to help assess the status of an ecosystem throughout a planning area;</li> <li>• to focus attention and tracking on ecosystems that merit conservation concern; and</li> <li>• to help rank allocation of resources to conservation efforts, such as parks, Wildlife Habitat Areas, Old Growth Management Areas (OGMA's) or Wildlife Tree Patches (WTPs), (Bunnell et al 2004).</li> </ul> <p>Location of potentially rare ecosystems is unlikely to be facilitated by Terrestrial Ecosystem Mapping or Predictive Ecosystem Mapping as they do not map at a scale sufficient to detect rare site series. Consequently, the strategy will be applied at the stand level through identification of rare sites in the SP process and through the application of retention (see Indicator 1.1.4).</p>
<b>Means of achieving objective and target</b>	<p>Licencees participation with First Nations to develop and improve upon the revised Archeological Overview Assessment model and process.</p> <p>Protected areas are identified on Licencee maps. Ecological zones have been prioritized for rare ecosystem assessment based on the following:</p> <ol style="list-style-type: none"> <li>a. number of CDC listed rare ecosystems (Red-listed ecological communities<sup>14</sup>) within the variant,</li> <li>b. the proportion of the provincial extent of the BEC variant in the TSA and</li> <li>c. the proportion of the BEC variant in the TSA that is in the Non-THLB.</li> </ol> <p>For those prioritized BEC variants/site series with Red-listed ecological communities higher levels of WTPs and OGMA's<sup>15</sup> will be planned (i.e. beyond legislation and policy targets). WTPs or other reserves will favor older seral stages.</p> <p>For the remaining BEC variants/site series lower levels of WTPs and OGMA's will be planned (i.e. below legislation and policy targets).</p> <p>Retention to protect rare ecosystems should be designed to complement the existing Non-THLB reserves wherever possible.</p> <p>If a licencee identifies a rare ecosystem at anytime, best efforts will be made to incorporate the ecosystem into planned operations.</p>
<b>Forecast; Predicted Results or Outcome</b>	<p>All licencees participated with First Nations in the development of the revised Archeological Overview Assessment Model and Process (2003 baseline data).</p> <p>Out of 280 cutblocks harvested (with original SP's signed after January 1<sup>st</sup> 2007) there were two instances where documented Red-listed communities occurred and in both cases (100%) the substantial part of the identified occurrence was included in WTP's (2007 baseline data).</p>
<b>Forecast</b>	<p>Operational activities and plans that recognize and manage for known aboriginal rights and duly established title. As responsible stewards of public forest land, licencees will work proactively to build mutually beneficial relationships with Aboriginal peoples.</p> <p>A diversity of ecosystems while maintaining "rare" attributes, as well as a diversity and abundance of naturally occurring wildlife and their habitats. Through proposed protected areas and management guidelines for low intensity zones rare habitats will receive a higher level of preservation.<sup>16</sup></p>

<sup>14</sup> Refer to Appendix 5 for a list and description of prioritized red listed ecological communities

<sup>15</sup> Recognizing there is potential to move OGMA's to include red or blue listed ecosystems.

<sup>16</sup> KLRMP document "Assessment of the Kamloops LRMP Recommendation"; Feb 1995

## 4.0 Indicators and Indicator Matrices

<b>Target</b>	<p><b>12.</b> TSA Licencees will participate with First Nations to implement and improve upon the revised Archaeological Overview Assessment model and process.</p> <p><b>11.</b> Prioritized Red-listed ecological communities will be protected with retained existing forest.</p> <p>a. Where the ecological community is “documented, mapped (GPS/UTM) and field verified” for the cutting permit or TSL area where operations are being planned and:</p> <p>I. the ecological community represents less than 10% of the cutting permit or TSL area, then the majority of the identified occurrence is protected.</p> <p>V. the ecological community is greater than 10% of the gross area of either tenure noted above, then WTP placement will be weighted towards those communities.</p> <p>b. Where the ecological community is not well documented (i.e. ecological mapping at the site series level is not available), the prioritized list of Red-listed ecological communities is used as a support tool to weight WTP placement, or other reserves, to the applicable site series in the block</p>
Basis for the Target	<p>Developed by Licencees with First Nations An effective model will facilitate planning while effectively conserving and protecting First Nations values.</p> <p>Proactive measure to identify and conserve Red-listed ecological communities</p>
Legal Requirements	<p>Forest and Range Practices Act, Operational Planning and Practices Regulation</p>
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	<p><b>12.</b> Licencees will report on the number of cutblocks where an AOA was conducted. Licencees will report on the number of cutblocks where the AOA included a field visit.</p> <p><b>11.</b></p> <p>a. Licencees report the number of cutblocks where occurrence of ecosystems identified as “prioritized Red-listed ecological communities” was “documented”, and the number of these cutblocks where the Target was met.</p> <p>b. Licencees report the number of cutblocks where non-documented ecosystems identified as “prioritized Red-listed ecological communities” occurred, and the number of these cutblocks where the Target was met. A rationale is provided for each cutblock where the Target is not met.</p> <p>Reporting against targets 2a and 2b is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.</p>
Variance	<p>None except for 2b where target to be met on at least 90% of cutblocks where ecosystems identified as “prioritized Red-listed ecological communities” occurred.</p>

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>1.4.2 Protection of identified sacred and culturally important sites</b>
<b>Element(s)</b>	1.4 Protected Areas and Sites of Special Biological Significance
<b>Strategy(s)</b> Description	This indicator recognizes the importance of managing and protecting culturally important, sacred and spiritual sites, during forestry operations. First Nations may provide useful information concerning the specific location of these sites and the specific forest characteristics requiring protection or management. The intent of the indicator is to manage and/or protect those truly important sites, thus there is a degree of reasonableness in identifying the sites.
Means of achieving objective and target	Efforts have been made to understand which First Nation traditional territories fall within the TSA and company Defined Forest Areas. Information sharing agreements are made with willing First Nation communities to promote the use and protection of sensitive information. Open communications with local First Nations during Plan reviews. Written requests for communication are responded to. Licensees are aware of culturally important, sacred and spiritual sites leading to appropriate management or and protection.
<b>Forecast; Predicted Results or Outcome</b>	Where forest operations occur, culturally important, sacred and spiritual sites are managed or protected. As this is a new target, 2010 Monitoring Report results will be used to establish the baseline data.
Forecast	Open and meaningful relationships with local First Nations leading to a trust in sharing sensitive information. Forest plans contain information on how these sites will be managed or protected. Forest operations that properly execute the forest plans.
<b>Target</b>	<b>13.</b> 100 % protection of culturally important, sacred and spiritual sites that have been identified and mapped <u>or</u> 100% conformance to all plan commitments specifically designed to manage for culturally important, sacred and spiritual sites that have been identified and mapped.
Basis for the Target	Developed by Licensees with First Nations
Legal Requirements	Heritage Conservation Act, Forest and Range Practices Act, Forest Planning and Practices Regulation, Constitution Act (and subsequent Supreme Court decisions).
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Licensees will report: a. Number of roads constructed or cutblocks harvested where culturally important, sacred or spiritual sites had been identified, mapped. b. Number of roads constructed or cutblocks harvested where the identified sites were managed or protected in accordance with forest plans.
Variance	None

## 4.0 Indicators and Indicator Matrices

Indicator	2.1.1 Reforestation Success
Element(s)	2.1 Forest Ecosystem Resilience, 4.1 Carbon Uptake and Storage
Strategy(s) Description	Ensuring a diversity of tree species is maintained improves ecosystem resilience and productivity and positively influences forest health. Prompt reforestation ensures that the productive capacity of forest landbase to grow trees is maintained. Forests in British Columbia are classified according to the Biogeoclimatic Ecosystem Classification System, which identifies the tree species that are most suited ecologically for regeneration in any particular site. This not only helps to maintain the natural forest composition in an area, but it also lends itself to long term forest health and productive forests that uptake carbon.
Means of achieving objective and target	Licencees will specify tree species that are ecologically suited to the site in a timely manner. Silviculture regime and forward plans schedule activities consistent with established key dates contained within plans. Broad leaf species will be maintained through individual tree and patch retention and through natural regeneration in harvested areas.
Forecast; Predicted Results or Outcome	During September to December, a limited amount of regeneration activity occurred. Average regeneration delay was 22.1 months (2000 baseline data). Timber Supply Review (TSR II) reports 37,878 hectares of broad leaf species (Table 2) on the land base managed by the Ministry of Forests and Range (2003 baseline data).
Forecast	Prompt reforestation ensures that the productive capacity of forest landbase to grow trees is maintained. Promptness also aids in providing young trees a head start against competing vegetation, helping to reduce the need for manual or chemical brushing treatments. Healthy ecosystems with a diversity of native broadleaf and coniferous species maintained at endemic and sustainable levels. Forests that uptake carbon and positively contribute to a reduction in carbon emissions.
Target	<b>14.</b> Regeneration established within three years or less on average from time of harvest. <b>2.</b> There will be no net loss in the percent of land base for broad leaf species.
Basis for the Target	Prompt reforestation target exceeds legal requirements. Early establishment of a viable crop of trees reduces the need for subsequent interventions (re-planting, brushing). Maintaining broadleaf species provides for diversity of forest ecosystems in managed second-growth and third-growth forests. This diversity assists in the conservation of ecosystem resilience.
Legal Requirements	Forest and Range Practices Act, Forest Planning and Practices Regulation
Monitoring & Measurement Periodic	Broadleaf Target 2: Licencees will report the area of broad leaf species as updated for the most current TSR for the TSA. <sup>17</sup> Reporting to occur periodically – in the year following completion of subsequent TSR's and determination of the allowable annual cut.
Annual	Prompt reforestation Target 14: Licencees will report the average time (weighted by area) for regeneration establishment on areas where regeneration delay was declared during the reporting period.
Variance	<b>14.</b> 12 months beyond the 3-year target <b>2.</b> 5% reduction in broad leaf species (uncontrolled events associated with licensee operations: forest pests etc)

<sup>17</sup> The DFA includes the Kamloops TSA and TFL's 18 and 35. The Kamloops TSA is approximately (95%) the DFA. Targets and reporting are based on Kamloops TSA current status and future forecast.

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>2.2.1 Additions and deletions to the forest area</b>
<b>Element(s)</b>	2.2 Forest Ecosystem Productivity 4.2 Forest Land Conversion
<b>Strategy(s) Description</b>	Given the Crown tenure situation in BC forest companies generally have little influence on any additions or deletions to the forest area, which generally are a result of government land use objectives. Where companies can have an influence is through their practices, particularly as it pertains to access structures such as roads and landings. These access structures compact soil, making regeneration difficult, and disrupt the natural connectivity within forest stands.
<b>Means of achieving objective and target</b>	Loss of the landbase to access structures can be minimized with <ul style="list-style-type: none"> <li>• careful access planning to minimize the length of permanent road required for harvesting and the number of landings</li> <li>• and use of proper road construction, maintenance and deactivation procedures</li> </ul>
<b>Forecast; Predicted Results or Outcome</b>	The percentage area of harvested roads and landings within the total harvested area averaged 4.2% (2000 baseline data).
<b>Forecast</b>	Productive forest soils with minimized losses to forest development.
<b>Target</b>	<b>15.</b> Less than 6 percent, on average, of harvested areas will be in permanent roads and landings.
<b>Basis for the Target</b>	Exceeds legal limits. Reflects current performance level. Continued success with results at less than original 7% target resulted in a reduced maximum target at 6%. The percent target refers specifically to loss to the timber harvesting landbase due to access structures within harvested areas. It does not include land area lost to roads connecting harvested areas.
<b>Legal Requirements</b>	Forest and Range Practices Act, Forest Planning and Practices Regulation
<b>Monitoring &amp; Measurement Periodic</b>	Permanent access structures percent (NPUNN) are utilized in Provincial Timber Supply Review forecasts.
<b>Annual</b>	Licencees will report the area (ha) of permanent roads and landings identified in plans <sup>18</sup> over gross block area (ha) for cutblocks harvested during the reporting year, using information contained within Licence plans.
<b>Variance</b>	None

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<sup>18</sup> Using best information available (plan estimate or field measure)

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested</b>
<b>Element(s)</b>	2.2 Forest Ecosystem Productivity 4.2 Forest Land Conversion
<b>Strategy(s) Description</b>	<p>For many, sustainability involves limiting actual timber harvest to levels within the long-term capability of the forest to grow wood. To track this, managers need data on both harvest levels and long-term production capability to make proportional calculations. In practice, only the actual harvest level can be physically measured. The amount of wood that can be produced in perpetuity from a forest is a theoretical calculation that depends not only on the inherent wood-growing capacity of the forest ecosystem but also on the kinds and intensities of management inputs (e.g., silvicultural treatments). Because the latter inputs are under human control, a forest can have a wide range of potential long-term sustainable wood harvest levels. One strategy to ensure the wood growing capacity of forests is fully recognized is to retain it in a productive state. Other core indicators that directly measure this are 2.2.1 (additions and deletions to the forest area by cause) and 2.1.1 (reforestation success).</p> <p>The sustainable harvest level for the TSA, and TFL's 18 and 35, is determined by the Chief Forester after considering social, economic and biological criteria. More information on this rigorous process to determine allowable annual cut (AAC) levels can be found at the website: <a href="http://www.for.gov.bc.ca/hts/pubs/tsr/tsrbkg.htm">http://www.for.gov.bc.ca/hts/pubs/tsr/tsrbkg.htm</a></p>
<b>Means of achieving objective and target</b>	Licencees contribute to the sustainable harvest level by adhering to their apportioned harvest volume within the TSA. Cut control regulations dictate the short-term harvest flexibility.
<b>Forecast; Predicted Results or Outcome</b>	<p>Existing harvest level (2000 baseline data):</p> <ul style="list-style-type: none"> <li>• the TSA (2,393,180 m<sup>3</sup>) can be maintained for 20 years</li> <li>• TFL 18 (177,650 m<sup>3</sup>) can be maintained for 5 years</li> <li>• TFL 35 (125,600 m<sup>3</sup>) can be maintained indefinitely</li> </ul> <p>All licencees are within the cut control variance set out by regulation. The net TSA volume harvested in 2000 was 2,996,147 cubic meters. For TFL 18 it was 174,763 and for TFL 35 it was 79,642 cubic meters.</p>
<b>Forecast</b>	<p>Short and long term harvest flows that reflect forest conditions, forest practices, and the socio-economic objectives of the Crown. Timber Supply Review has detailed forecasts that then rely on the Chief Forester to provide a determination. Public input is provided throughout the process.</p> <p><u>Kamloops TSA</u></p> <p>The latest timber supply review for the TSA was completed in 2008. The review indicated the new AAC for the Kamloops TSA is 4.0 million cubic metres.</p> <p>This effectively reduced the former AAC by 8.1 percent. The new AAC includes partitions specifying allowable annual harvest volumes attributable to the following:</p> <ul style="list-style-type: none"> <li>• for harvesting in stands predominated by Douglas-fir, spruce, or balsam, a maximum of 1 700 000 cubic metres ('non-pine' partition);</li> <li>• for harvesting of pine species, 1 994 000 cubic metres, with the possibility of an increase to the extent of any under-harvesting in the 'non-pine' partition;</li> <li>• for harvesting in cedar- or hemlock-leading stands, 200 000 cubic metres;</li> <li>• for harvesting in PA 16, 86 000 cubic metres; and</li> <li>• for harvesting in deciduous-leading stands outside PA 16, within the Headwaters District, 20 000 cubic metres;</li> </ul> <p>More information on the timber supply review can be found at: <a href="http://www.for.gov.bc.ca/hts/tsa/tsa11/docs.htm">http://www.for.gov.bc.ca/hts/tsa/tsa11/docs.htm</a></p> <p><u>TFL 18:</u></p> <p>A timber supply review for TFL 18 was completed in 2006. The new AAC determination concluded that: Effective March 9, 2006, in response to the need to address the mountain pine beetle epidemic and other forest health concerns, and as a result of improved productivity estimates for TFL 18, the new AAC for TFL 18 will be 290 000 cubic metres. This AAC is intended to address salvage harvesting of lodgepole pine-leading stands that are, or are highly susceptible to being, attacked by the mountain pine beetle, and other stands affected by other forest health agents such as the spruce bark beetle. This AAC will remain in effect until a new AAC is determined, which must take place within five years of the present determination.</p> <p>More information on the timber supply review can be found at: <a href="http://www.for.gov.bc.ca/hts/tfls.htm">http://www.for.gov.bc.ca/hts/tfls.htm</a></p> <p><u>TFL 35:</u></p> <p>A timber supply review for TFL 35 was completed in March 2004. The new AAC determination concluded that: Effective March 1, 2004, the new AAC for TFL 35 will be 325 600 cubic metres, an increase of 159 percent from the previous AAC. The purpose of this increase is to facilitate increased harvesting in order to minimize timber losses due to the 2003 McLure fire and the current MPB epidemic. In the short term, the licensee will focus primarily on mitigating losses to fire-damaged stands and beetle infested stands. This may well result in temporarily reducing the harvest of stands where the leading species is balsam, cedar, Douglas-fir or spruce. This AAC will remain in effect until a new AAC is determined, which must take place within five years of this determination.</p> <p>More information on the timber supply review can be found at: <a href="http://www.for.gov.bc.ca/hts/tfls.htm">http://www.for.gov.bc.ca/hts/tfls.htm</a></p>
<b>Target</b>	<b>16.</b> Harvest the annual cut allocation for the year consistent with the Cut Control Regulation and Policy.
<b>Basis for the Target</b>	Legal requirements.
<b>Legal Requirements</b>	Forest Act, Cut Control Regulation

## 4.0 Indicators and Indicator Matrices

<b>Monitoring &amp; Measurement</b> Periodic	The schedule for subsequent Timber Supply Reviews for the TSA and TFL's can be found at: <a href="http://www.for.gov.bc.ca/hts/schedule.htm">http://www.for.gov.bc.ca/hts/schedule.htm</a> .
Annual	Licencees will report the harvest level allocated for each licence and harvest level cut (cut control volume) for the past reporting year.
Variance	According to the Cut Control Regulation and Policy



## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>2.2.3 Level of conformance to riparian management area and lakeshore commitments contained within plans<sup>19</sup> (non-core indicator)</b>
<b>Element(s)</b>	2.2 Forest Ecosystem Productivity, 3.2 Water Quality and Quantity
<b>Strategy(s)</b> Description	This indicator forms part of the overall strategy to manage forest ecosystems at the landscape and stand levels. Riparian management areas, as prescribed in legislation, provide connectivity of forested cover along waterways, which are generally areas with high value for wildlife habitat and movement. District lakeshore guidelines provide additional management direction, as required, to meet social and ecological objectives for specified lakes and waterways.
Means of achieving objective and target	Licencees will attempt to identify small and unclassified wetlands and will take measures to minimize impacts to these features. All commitments are included and highlighted in Licencee plans
<b>Forecast; Predicted Results or Outcome</b>	No riparian infractions occurred during the harvest of 3905 hectares of cutblocks and right of way areas (2000 baseline data).
Forecast	Well functioning connected ecosystems that are managed for timber and non-timber forest values. Properly functioning riparian systems and conservation of fish habitat.
<b>Target</b>	<b>17. 100 percent conformance to riparian and lakeshore commitments made within plans.</b>
Basis for the Target	Kamloops and Headwaters Districts have policies for riparian management Recognition that riparian areas are “focus areas” for successfully meeting biodiversity and ecosystem objectives. Commitments may, and often do, exceed legal requirements.
Legal Requirements	Forest and Range Practices Act, Forest Planning and Practices Regulation
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Licencees will report the number of riparian and lakeshore related non conformances to plans occurring during the reporting year as compared to the gross area of cutblocks that were harvested that had riparian management areas within or adjacent to them.
Variance	5 percent. Variance to accommodate nonconformance to plans that have little or no impact to the environment and/or to the social and ecological objectives of lakeshore areas or completed for safety purposes.

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<sup>19</sup> Plans prepared by licencees are in accordance with legal and higher level plan requirements

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>3.1.1 Level of soil disturbance</b>
<b>Element(s)</b>	3.1 Soil Quality and Quantity
<b>Strategy(s) Description</b>	Soil disturbance can have positive (mineral soil exposure for seed germination) or negative (soil compaction) impacts. Managing the detrimental soil disturbance levels will help to retain the productive capacity of ecosystems. Soil compaction, displacement and erosion are components of potentially detrimental soil disturbance. These targets seek to manage soil disturbance levels caused by permanent roads as well as disturbance levels caused by harvest operations.
Means of achieving objective and target	Maximum planned levels of soil disturbance are assigned to all cutblocks based on related field data. Expeditious re-establishment of new stands can assist in preventing erosion and other forms of soil displacement. Loss of the landbase to access structures can be minimized with careful access planning to minimize the length of permanent road required for harvesting and the number of landings and by using proper road construction, maintenance and deactivation techniques.
<b>Forecast; Predicted Results or Outcome</b>	<b>18.</b> Licencees met soil disturbance objectives on all 3499 hectares of cutblock area harvested (2000 baseline data). <b>15.</b> The percentage area of harvested roads and landings within the total harvested area averaged 4.2% (2000 baseline data).
Forecast	Productive forest soils with minimized losses to forest development.
<b>Target</b>	<b>18.</b> 100 percent conformance to soil conservation measures contained within plans. <b>15.</b> Less than 6 percent, on average, of harvested areas will be in permanent roads and landings.
Basis for the Target	Maintenance of site productivity is a core prerequisite for achieving sustainability. Managing the area lost to permanent roads has a direct impact on retaining the productive capacity of the landbase.
Legal Requirements	Forest and Range Practices Act, Forest Planning and Practices Regulation
<b>Monitoring &amp; Measurement</b>	
Periodic	
Annual	<b>18.</b> Licencees will report the area (hectares) where soil disturbance commitments were achieved as compared to the total net area of cutblocks that were harvested during the reporting year. <b>15.</b> Licencees will report the area (ha) of permanent roads and landings identified in plans <sup>20</sup> over gross block area (ha) for cutblocks harvested during the reporting year, using information contained within Licencee plans.
Variance	None

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<sup>20</sup> Using best information available (plan estimate or field measure)

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>3.1.2 Level of downed woody debris</b>
<b>Element(s)</b>	3.1 Soil Quality and Quantity
<b>Strategy(s) Description</b>	<p>This indicator and target addresses the need to maintain structural features of forest ecosystems at the stand level. Strategies include direction for basic levels of coarse woody debris CWD, creation of stubs, and guidelines for enhanced levels of CWD in landscape units with high biodiversity emphasis options.</p> <p>The main ecological principles guiding the CWD management strategy are:</p> <ul style="list-style-type: none"> <li>• CWD immediately after harvest is rarely a concern in the Kamloops TSA (except in some uniform second-growth sites, or with intensive site preparation). The main problem in managed stands is low CWD levels 50-80 years after harvest, particularly larger pieces.</li> <li>• Leaving more downed wood at harvest does not help CWD levels later in the rotation. Retained snags and live trees, and mortality of regenerating trees are required.</li> <li>• Piles of logs at roadside are of little use for any ecological functions (except carbon storage, if they are not burnt).</li> <li>• Distribution of CWD across managed stands is important, particularly maintaining some CWD through time in the harvested areas (outside of retention patches).</li> <li>• Variability in CWD levels and types among stands is high and important ecologically.</li> <li>• Landscape context matters: cutblocks with low CWD levels are of less concern where most stands in the Non-THLB have natural CWD levels, and occurrence of Non-THLB is significant.</li> </ul>
<b>Means of achieving objective and target</b>	<p>Companies will achieve objectives through a combination of stand-level actions including salvage guidelines, dispersed and group retention, modifying piling practices and adhering to minimum post-harvest limits of coarse woody debris.</p> <p>Operations emphasize maintenance of larger woody debris (&gt;30 cm (small diameter) and &gt;2 meters length) present on the net area to reforest before harvesting. 50% of blocks have dispersed individual trees or small (&lt;0.25 ha) patches. Coarse woody debris (&gt;7.5 cm and &gt;2 meters length) is incorporated in cull piles during site preparation only where excessive amounts are present (potential fire hazard and/or impedes regeneration).</p> <p>CWD is managed on a rotation bases. Salvage of current wildlife trees, wildlife tree patches or future mortality within reserves is by exception. Live, dead and dying trees are left on site for CWD recruitment.</p>
<b>Forecast; Predicted Results or Outcome</b>	A total of 280 cutblocks with original SP's signed after January 1st, 2007 were harvested during the reporting period. 266 cutblocks or 95 percent of the harvested cutblocks met the coarse woody debris requirements contained in the plan (2007 baseline data).
<b>Forecast</b>	Healthy ecosystems with a diversity and abundance of native species and habitats.
<b>Target</b>	<p><b>19.</b> Coarse woody debris shall be left on each block:</p> <ol style="list-style-type: none"> <li>a. a minimum of 5 m<sup>3</sup>/ha dispersed on blocks with very dry BEC variants, denoted with an "x" descriptor for moisture</li> <li>b. a minimum of 20 m<sup>3</sup>/ha dispersed on all other blocks</li> </ol>
<b>Basis for the Target</b>	Targets consider the Forest Practices Branch Coarse Woody Debris Best Management Guidelines for the Interior BC (Lloyd, 2005). Retention of standing and downed woody debris provides habitat for many living organisms and soil organic matter as it decomposes.
<b>Legal Requirements</b>	Forest and Range Practices Act, Forest Planning and Practices Regulation, Wildfire Act and Regulation
<b>Monitoring &amp; Measurement Periodic</b>	Timber Supply review to ensure no timber supply impact.
<b>Annual</b>	Licenceses will report compliance to the target (Y/N). Reporting will use supplemental information collected as part of post harvest waste assessments and may include ocular estimates. Reporting against the target is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.
<b>Variance</b>	20%

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance</b>
<b>Element(s)</b>	3.2 Water Quality and Quantity
<b>Strategy(s) Description</b>	Water quality and quantity can be affected by stand-replacing disturbances (human and natural-caused). The effects are normally highest in the initial post-disturbance years and diminish over time as regenerating forest cover is established. The critical threshold at which the disturbance begins to effect water values varies according to topography, soil properties, vegetation types, and climate. Roads and stream crossings can have a large impact on water quality and prompt revegetation of road fill and cut slopes help reduce the risk of sedimentation. Target 10 recognizes the importance of early application of grass seed to disturbed areas and the success that has in vegetation establishment. Target 20 is intended to focus more planning and assessment in watersheds that have been identified as high risk and with a significant history of logging and road construction, prior to implementing additional operations. Water quality, quantity and timing are influenced to varying degrees by road construction and harvesting. As the level of recent disturbance (measured as ECA) increases, the more likely there is to be a negative influence.
<b>Means of achieving objective and target</b>	Licenseses carry out necessary hydrological assessments prior to implementing operations in the top 25 highest risk watershed (post MPB) <sup>21</sup> where there has been a significant history of forest harvesting and road construction (equivalent clearcut areas approaching or exceeding 35%). Any forest management recommendations developed as part of the hydrological assessment are referenced in Licensee plans. Timely revegetation of exposed soils on newly constructed road cut and fill slopes is completed per licensee plans.
<b>Forecast; Predicted Results or Outcome</b>	<b>10.</b> Road cuts and fill slopes were seeded or planted on average within 3.4 months of disturbance, compared to a target of 12 months (2000 baseline data). <b>20.</b> Healthy watersheds that function in a well-balanced natural state. As this is a new target, 2010 Monitoring Report results will be used to establish the baseline data.
<b>Forecast</b>	Acceptable levels of water quality (clean water) and quantity (maintain stream-flow regimes within natural variation). Riparian systems will maintain existing uses and support human and ecological communities and aquatic life. Introduction of sedimentation into streams is minimized.
<b>Target</b>	<b>10.</b> All planned road cut and fill slope seeding application carried out using certified seed and within 12 months of completed road construction on suitable sites. <b>20.</b> Equivalent clear cut area (ECA) not to exceed 35% without doing further hydrological assessments prior to harvesting. Target applies to the highest risk rated watersheds (post MPB) as identified in Appendix 7.
<b>Basis for the Target</b>	Expert opinion that adverse affects from harvesting/road construction typically become apparent around the 30-35% level. Ensures focused assessment of watershed conditions prior to additional operations in watersheds determined to be at risk and having an ECA at the "warning flag" level. Re-vegetation of exposed mineral soil to reduce soil erosion and sedimentation of streams, and reduce establishment of invasive plants.
<b>Legal Requirements</b>	Forest and Range Practices Act, Forest Planning and Practices Regulation
<b>Monitoring &amp; Measurement Periodic</b>	Age class distribution of old forests are forecast as part of periodic Timber Supply Reviews to monitor impacts on the landscape.
<b>Annual</b>	<b>10.</b> Licensees will report the use of certified seed and the average time for road cut and fill slope seeding application on areas of new road construction during the reporting year. <b>20.</b> Within any of the 25 high risk watersheds: Licensees will report the number of cutblocks harvested where the watershed ECA exceeded 35% and no further hydrological assessments were completed compared to the total number of cutblocks harvested where the watershed ECA exceeded 35%. Licensees will report which high risk watershed(s) the cutblocks with ECA's exceeding 35% (and no further assessments completed) were within.
<b>Variance</b>	<b>10.</b> 3 months <b>20.</b> 5%

<sup>21</sup> Table 25. Risk Based Watershed Screening Procedure for the Kamloops TSA. May 22, 2007 (See Kamloops North Thompson 2010 SFM Plan appendix 7)

## 4.0 Indicators and Indicator Matrices

Indicator	4.1.1 Net Carbon Uptake
Element(s)	4.1 Carbon Uptake and Storage
Strategy(s) Description	<p>Forests have great potential to sequester and store carbon from the atmosphere. Given this, managers should recognize the imperative of keeping forest lands in vigorous tree growth at all times. This often means understanding any age class imbalances and strategies for correction. It also includes ensuring prompt tree regeneration following disturbances such as timber harvests and converting the smallest possible amount of forest land to non-forest land during forest operations (e.g., minimizing roads and landings).</p> <p>Forest carbon has recently become a key SFM value, especially in light of Canada’s international commitment to lower its net carbon outputs to the atmosphere. Models for calculating a forest carbon budget (e.g., the Canadian Forest Service’s Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3)) are becoming available for use by practitioners particularly where they can be linked to forest inventory and timber supply models. Their use in forest planning 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.</p> <p>In their 2009 summary of carbon management in BC’s forests<sup>22</sup> Mike Greig and Gary Bull report a need for additional guidance for forest managers and practitioners. “The interest in managing British Columbia’s forests for climate control and CO2 offsetting projects has built to the point where forest managers are seeking guidance. Equally important is the public’s desire to understand the potential of provincial forests in mitigating climate change and to have this clearly communicated. Some work has taken place in assembling carbon yield curves, researching local carbon storage (Kranabetter and Macadam 2006), and undertaking carbon accounting projects. However, no published handbooks or policies exist to guide forest managers, practitioners, or the public.†</p> <p>The level of carbon budget analysis in British Columbia relies largely on the forest inventory (species and growth rates) and underlying assumptions the forest management regime and what makes up the timber harvesting land base. Because of some of the uncertainty surrounding the data inputs, it can be difficult to tease out changes in carbon sequestration modeling that are strictly as a result of changes to a particular management regime. This creates difficulties for forest managers who are trying to understand the carbon balance implications of various management regimes.</p> <p>Recent timber supply reviews in the province have included carbon sequestration in the analysis such as that for the Lillooet TSA (May 2009). This trend is expected to continue. In his rationale for the Allowable Annual Cut determination for the Lillooet TSA, the Chief Forester reported as government and society address the important considerations related to carbon management and climate change mitigation, and reach decisions on how all of the potential uses of forest land should be balanced with carbon management, those decisions will be reflected in future AAC determinations.” Also in his rationale, the Chief Forester recognizes the need for government to take an active role in understanding carbon budgets: “No doubt governments will be called on to analyse and prioritise the many alternative potential uses of the forest, from which to derive and provide a range of socially acceptable management objectives. Analysis of the carbon implications of forest management alternatives will be important information for consideration in the making of such decisions on society’s behalf by our elected representatives.”</p> <p>Thus, the strategy within the SFM Plan will be to continue to report on the targets within this indicator (forest land conversion and age class distribution) as well as the indicator for forest ecosystem resilience (reforestation success) as a means of demonstrating commitment to positively influence carbon balance within the TSA.</p> <p>Licensees will continue to monitor developments in carbon sequestration modeling both at the provincial and regional level and will utilize this information within the SFM Plan. At the very latest, licensees will rely upon forest carbon analysis conducted in conjunction with the next Timber Supply Review. If government elects not to conduct this analysis, licensee will select the appropriate forest carbon stock model and calculate carbon stock within the TSA.</p>
Means of achieving objective and target	<p>Contribute positively to carbon uptake and storage by:</p> <ol style="list-style-type: none"> <li>1. Maintain current harvest priority: <ul style="list-style-type: none"> <li>• Forest health management – harvesting attacked and susceptible stands (generally older stands)</li> <li>• Concentrate harvest on stands with the most years beyond culmination (maximum mean annual increment)</li> </ul> </li> <li>2. Minimize loss of the landbase to access structures by: <ul style="list-style-type: none"> <li>• careful access planning to minimize the length of permanent road required for harvesting and the number of landings</li> <li>• use of proper road construction, maintenance and deactivation procedures</li> </ul> </li> </ol>
Forecast; Predicted Results or Outcome	<p><b>Target 4.</b> All age classes except age class 1 have less than 8.5% area representation. Age classes 1 to 5 average only 6.3% reflecting the disproportionate area in over mature age classes. (2001 baseline data).</p> <p><b>Target 15.</b> The percentage area of harvested roads and landings within the total harvested area averaged 4.2% (2000 baseline data).</p>

<sup>22</sup> Carbon Management in British Columbia’s Forests: Opportunities and Challenges. Forrex Series 24. 2009

## 4.0 Indicators and Indicator Matrices

Forecast	<p>Continuation of current harvest priorities will lead to balanced age classes on the available productive forest land. The resulting actively growing, healthy forests will best contribute to carbon uptake and storage. Protected Area, Old Growth Management Area (OGMA), and Wildlife Tree Patch Strategies, together with inaccessible areas, ensure retention of old growth to sustain biodiversity and ecosystem objectives. Carbon stored within these reserve areas are an important part of the entire carbon cycle.</p> <p>Progress to target will be steady:</p> <ul style="list-style-type: none"> <li>▪ In 50 years age classes 1 to 5 average 7.4% and three age classes meet target.</li> <li>▪ Target will be achieved within 100 years</li> </ul> <p>Productive forest soils with minimized losses to forest development will ensure the greatest land base available for carbon uptake and storage.</p>
Target	<p><b>4.</b> Progress towards a stable forest age class distribution on the timber harvesting land base where each age class to 100 years old [1 (1 to 20), 2 (21-40), 3 (41-60), 4 (61 to 80) and 5 (81 to 100)] occupies at least 8.5% of the timber harvesting land base. Three age classes meet this target within 50 years.</p> <p><b>15.</b> Less than 6 percent, on average, of harvested areas will be in permanent roads and landings.</p>
Basis for the Target	<p>A more even distribution of age classes will provide a relatively even flow of value to industry and the community, and a more stable carbon balance.</p> <p>Managing the area lost to permanent roads has a direct impact on retaining the productive capacity of the landbase.</p>
Legal Requirements	NA
Monitoring & Measurement Periodic	<p><b>Target 4:</b> Licencees report the current age class distribution as last reported by a Timber Supply Review<sup>23</sup> Reporting to occur periodically – in the year following completion of subsequent TSR's and determination of the allowable annual cut. Current status and future forecast of age class distribution is provided as part of Timber Supply Review completed periodically.</p>
Annual	<p><b>Target 15:</b> Licencees will report the area (ha) of permanent roads and landings identified in plans<sup>24</sup> over gross block area (ha) for cutblocks harvested during the reporting year, using information contained within Licencee plans.</p>
Variance	<p>Target 4: Three age classes meet this target within 70 years (attaining age class sooner than 50 years seen as a benefit). There is no variance for target 15.</p>

<sup>23</sup> The DFA includes the Kamloops TSA and TFL's 18 and 35. The Kamloops TSA is approximately (95%) the DFA. Targets and reporting are based on Kamloops TSA current status and future forecast.

<sup>24</sup> Using best information available (plan estimate or field measure)

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<b>Indicator</b>	<b>5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA</b>
<b>Element(s)</b>	5.1 Timber and Non-Timber Benefits
<b>Strategy(s) Description</b>	<p>Forests represent not only a return on investment (measured, for example, in dollar value, person-days, donations, etc.) for the organization but also a source of income and non-financial benefits for DFA-related workers, local communities and governments. While there is limited information on the ecological services and non-timber benefits produced in the DFA, it is important to consider the costs and benefits of a variety of goods and services.</p> <p><u>Timber benefits</u> can be measured by looking at sustainable harvest levels in relation to the allocated supply levels determined by the Chief Forester. The harvest level for the TSA, and TFL's 18 and 35, is set only after considering social, economic and biological criteria. More information on this rigorous process to determine allowable annual cut (AAC) levels can be found at the website: <a href="http://www.for.gov.bc.ca/hts/pubs/tsr/tsrbkg.htm">http://www.for.gov.bc.ca/hts/pubs/tsr/tsrbkg.htm</a></p> <p><u>Non-timber benefits</u> can be assessed using a variety of measures including communication with local communities, ranchers and trappers. Managing for the retention of visual quality helps to ensure the interests and/or values of other forest users and stakeholders are attained.</p>
<b>Means of achieving objective and target</b>	<p>Licencees contribute to the sustainable harvest level by adhering to their apportioned harvest volume within the TSA. Cut control regulations dictate the short-term harvest flexibility.</p> <p>Communication to occur with First Nation communities, ranchers, trappers and the broader public to discuss forest plans and operations. Also to respond to any written request as a result of those communications.</p> <p>Completion of visual quality assessments where operations are planned within scenic areas.</p>
<b>Forecast; Predicted Results or Outcome</b>	<p><u>Target 16</u> - Harvest within allocated levels (2000 baseline data):</p> <ul style="list-style-type: none"> <li>• the TSA (2,393,180 m3) can be maintained for 20 years</li> <li>• TFL 18 (177,650 m3) can be maintained for 5 years</li> <li>• TFL 35 (125,600 m3) can be maintained indefinitely</li> </ul> <p>All licencees are within the cut control variance set out by regulation. The net TSA volume harvested in 2000 was 2,996,147 cubic meters. For TFL 18 it was 174,763 and for TFL 35 it was 79,642 cubic meters.</p> <p><u>Target 21</u> – Annual meetings with affected ranchers: Ninety-two percent of ranchers affected by planned operations were communicated with during the reporting period compared to a target of 90 percent (2001 baseline data).</p> <p><u>Target 22</u> – Effective communication with trappers: As this is a new target, 2010 Monitoring Report results will be used to establish the baseline data.</p> <p><u>Target 23</u> – Open communication and follow-up with local First Nations (2004 baseline data):</p> <ul style="list-style-type: none"> <li>• All licencees communicated with First Nations (42 meetings/meaningful communications)</li> <li>• Licencees responded to all written requests for communication.</li> </ul> <p><u>Target 24</u> – Effective public communication (2000 baseline data):</p> <ul style="list-style-type: none"> <li>• Licencee's interests were represented at KLRMP meetings.</li> <li>• 66% of LRUP meetings were attended (this is below the target of 70% but within the variance of 60% of meetings attended);</li> <li>• A total of 12 community meetings were attended.</li> <li>• All written requests (3) for communication were responded to.</li> </ul> <p><u>Target 25</u> – Meeting visual quality objectives: <u>Harvesting met visual quality objectives in 182/183 cutblocks (2000 baseline data).</u></p>
<b>Forecast</b>	<p>Short and long term harvest flows that reflect forest conditions, forest practices, and the socio-economic objectives of the Crown. (see indicator 2.2.2 for more detail on forecast).</p> <p>Minimize the tree/grass/cattle conflicts through integrated and co-operative management practices.</p> <p>Minimize the impact of harvest operations on fur bearing animals.</p> <p>Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local First Nations.</p> <p>Public participation in forest planning and operations that is open, inclusive and responsive to public concerns.</p> <p>Visual quality within scenic areas reflects social preferences.</p>

## 4.0 Indicators and Indicator Matrices

<b>Target</b>	<p><b>16.</b> Harvest the annual cut allocation for the year consistent with the Cut Control Regulation and Policy.</p> <p><b>21.</b> Where forest operations are planned within range units, the forest licensee will communicate with the rancher in advance of those operations to minimize impacts to affected ranchers.</p> <p><b>22.</b> Communication of forest operations to occur with trappers 100% of the time in advance of operations (see annual reporting requirements on how this indicator is applied).</p> <p><b>23.</b></p> <p>a. Open communications (track meetings and other meaningful communication) with local First Nations during Operational Plan reviews will include an understanding of traditional territories and other aboriginal rights including cultural and spiritual values.</p> <p>b. TSA Licensees respond to all written requests for communication from First Nations</p> <p><b>24.</b></p> <p>a. TSA Licensees will demonstrate efforts by participating in public multi-stakeholder meetings at both the strategic KLRMP level (interests represented at every meeting) and at the local level (participation in a minimum of 60% of Local Resource Use Plan meetings). Licensees will also report on the number of community meetings held or attended.</p> <p>b. TSA Licensees respond to all written requests from the public for communication within 30 days of their receipt.</p> <p><b>25.</b> 100% conformance to strategies in plans designed to achieve preservation, and partial retention visual quality objectives.</p>
Basis for the Target	Developed by licensees with the public or First Nations. Essential that holders of varying land use tenures on the same land base communicate regularly. Legal requirements.
Legal Requirements	Forest Act, Cut Control Regulation, Heritage Conservation Act, Forest and Range Practices Act, Forest Planning and Practices Regulation
<b>Monitoring &amp; Measurement</b> Periodic	The schedule for subsequent Timber Supply Reviews for the TSA and TFL's can be found at: <a href="http://www.for.gov.bc.ca/hts/schedule.htm">http://www.for.gov.bc.ca/hts/schedule.htm</a> .
Annual	<p><u>Target 16</u> Licensees will report the harvest level allocated for each licence and harvest level cut (cut control volume) for the past reporting year.</p> <p><u>Target 21</u> Licensees will report percent of ranchers affected by planned operations that were communicated with during the reporting period.</p> <p><u>Target 22</u> Where trappers holding a registered trapline advise forest licensees of the areas that they will be active in a given year and seek to understand what forest operations might be occurring for that year, licensees will report if they communicated with that trapper their planned forest operations.</p> <p>Should a forest licensees plans change during that year such that operations will be conducted in areas not originally discussed (excluding areas discussed in general and identified as not being of concern to the trapper regardless of any operations taking place), companies will report if they made a concerted effort to contact that trapper and inform them of those operations.</p> <p><u>Target 23</u> Licensees will report:</p> <p>a. Number of meetings and meaningful communications with First Nations that included management and protection of traditional knowledge, non-timber resources, and cultural and spiritual values.</p> <p>b. Number of written requests for communication from First Nations versus the number of responses made to First Nations. Reporting is on a one to one ratio (one response for each request).</p> <p><u>Target 24</u> Licensees will report:</p> <p>a. A yes/no answer as to whether their interests were represented at KLRMP meetings, the number of LRUP meetings attended against the number held within their operating area. They will also report the number of community meetings held or attended during the reporting period.</p> <p>b. Number of responses sent out by licensees compared to the number of written requests for communication. Report the average timeline for response.</p> <p><u>Target 25</u> Licensees will report on the number of harvested blocks that achieve the visual intent as described in plans versus the number of blocks harvested within the past year that had preservation, retention or partial retention visual quality objectives.</p>
Variance	<p><u>Target 16</u> According to the Cut Control Regulation and Policy</p> <p><u>Target 21</u> 10%</p> <p><u>Target 22</u> 5%</p> <p><u>Target 23</u> None</p> <p><u>Target 24</u> None, beyond that stated in the target.</p> <p><u>Target 25</u> None</p>

<b>Indicator</b>	<b>5.2.1 Level of investment in initiatives that contribute to community stability.</b>
<b>Element(s)</b>	5.2 Communities and Sustainability



## 4.0 Indicators and Indicator Matrices

<p><b>Strategy(s)</b> Description</p>	<p>Investments that contribute to community stability are largely predicated by looking at the harvest level for an organization. As the majority of forest workers are hired locally, communities benefit by forest planning and operations. Additional investments that occur in manufacturing facilities are also dependant upon a secure and stable harvest level.</p> <p>The amount of local spending related to delivered log costs and Licence obligations is estimated by licensees within the TSA to be 65-70% ignoring stumpage paid to government. With stumpage removed local spending is 85-90% of all delivered log costs. The average breakdown of expenditures by phase of log deliveries and local spending is as follows:</p> <p>Logging – 33% of expenditure (all local – within the TSA)  Hauling – 17% of expenditure (all local – within the TSA)  Road construction and maintenance – 9% of expenditure (all local – within the TSA)  Reforestation – 7% of expenditure (1/2 local – within the TSA)  Indirect costs – 11% of expenditure (1/2 local – within the TSA)  Stumpage 23% of expenditure</p> <p>Using a conservative figure of \$40.00/m3 expenditure for log deliveries and associated license obligations, spending within the TSA would be over 100 million dollars annually if the entire AAC allocation was harvested.</p> <p>Thus the forest sectors contribution to community stability can be measured by looking at sustainable harvest levels in relation to the allocated supply levels determined by the Chief Forester. The harvest level for the TSA, and TFL's 18 and 35, is set only after considering social, economic and biological criteria. More information on this rigorous process to determine allowable annual cut (AAC) levels can be found at the website:  <a href="http://www.for.gov.bc.ca/hts/pubs/tsr/tsrbkg.htm">http://www.for.gov.bc.ca/hts/pubs/tsr/tsrbkg.htm</a></p>
<p>Means of achieving objective and target</p>	<p>Licencees contribute to the community stability and to sustainable harvesting by adhering to their apportioned harvest volume within the TSA. Cut control regulations dictate the short-term harvest flexibility.</p>
<p><b>Forecast;</b> Predicted Results or Outcome</p>	<p>Continuing to harvest at sustainable levels provides wage and taxation benefits to local communities. The existing harvest level (2000 baseline data):</p> <ul style="list-style-type: none"> <li>• the TSA (2,393,180 m3) can be maintained for 20 years</li> <li>• TFL 18 (177,650 m3) can be maintained for 5 years</li> <li>• TFL 35 (125,600 m3) can be maintained indefinitely</li> </ul> <p>All licencees are within the cut control variance set out by regulation. The net TSA volume harvested in 2000 was 2,996,147 cubic meters. For TFL 18 it was 174,763 and for TFL 35 it was 79,642 cubic meters.</p>
<p>Forecast</p>	<p>Short and long term harvest flows that reflect forest conditions, forest practices, and the socio-economic objectives of the Crown. (see indicator 2.2.2 for more detail on forecast).  Forest organizations who harvest in relation to their allocation of the allowable annual cut thereby providing for employment and taxation revenue in local communities.</p>
<p><b>Target</b></p>	<p><b>16.</b> Harvest the annual cut allocation for the year consistent with the Cut Control Regulation and Policy.</p>
<p>Basis for the Target</p>	<p>Legal requirements.</p>
<p>Legal Requirements</p>	<p>Forest Act, Cut Control Regulation</p>
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>The schedule for subsequent Timber Supply Reviews for the TSA and TFL's can be found at:  <a href="http://www.for.gov.bc.ca/hts/schedule.htm">http://www.for.gov.bc.ca/hts/schedule.htm</a>.</p>
<p>Annual</p>	<p>Licencees will report the harvest level allocated for each licence and harvest level cut (cut control volume) for the past reporting year.</p>
<p>Variance</p>	<p>According to the Cut Control Regulation and Policy</p>

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>5.2.2 Level of investment in training and skills development.</b>
<b>Element(s)</b>	5.2 Communities and Sustainability
<b>Strategy(s) Description</b>	<p>Sustainable forest management provides training and awareness opportunities for forest workers as organizations seek continual improvement in their practices. Investments in training and skill development generally pay dividends to forest organizations by way of a safer and more environmentally conscious work environment. Assessing whether forest contractors have received both safety and environmental training is a direct way of measuring this investment. Additionally, training plans should be in place for employees of the forest organizations who work in the forest. Measuring whether the training occurred in accordance with these plans will confirm an organizations commitment to training and skills development.</p> <p>Effective January 1, 2009, SAFE certification (WorkSafe BC) became a pre-requisite to bid on BCTS contracts. The Ministry's Forests For Tomorrow program also requires SAFE certification for its agreement holders.</p>
Means of achieving objective and target	Licencees invest in skills development by ensuring forest contractors have adequate safety and environmental training and for woodland employees (staff) by ensuring training occurs in accordance with their plans.
<b>Forecast; Predicted Results or Outcome</b>	Educated workforce that performs their duties safely and responsibly. As these are new targets, the 2010 Monitoring Report results will be used to establish the baseline data.
Forecast	Forest planning and operations are conducted with a genuine focus on worker safety and environmental stewardship. Forest contractors and employees have the adequate knowledge and tools to conduct their jobs, performing well even under upset conditions.
<b>Target</b>	<b>26.</b> 90% of DFA forest contractors will have both environmental and safety training. 90% of woodlands employees are trained in accordance with training plans.
Basis for the Target	Trained workforce critical to safe and proper execution of plans. 90% target and variance allows for some discretion with respect to contractors or employees whose work is insulated from forest operations (for example administrative or clerical work).
Legal Requirements	Voluntary certification commitments, Workers Compensation Act.
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	<p><u>Target 1</u> Licensees will report the total number of forest contractors and identify the number that had received both environmental and safety training. For BCTS, report on the number of licences and contracts awarded that required SAFE certification or an equivalent safety certification/registration.</p> <p><u>Target 2</u> Licensees will report the total number of forestland employees (staff) and identify the number that had received training in accordance with their training plan.</p>
Variance	5%

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>5.2.3 Level of direct and indirect employment</b>
<b>Element(s)</b>	5.2 Communities and Sustainability
<b>Strategy(s)</b> Description	<p>Forests represent not only a return on investment (measured, for example, in dollar value, person-days, donations, etc.) for the organization but also a source of income and non-financial benefits for DFA-related workers, local communities and governments.</p> <p>While employment levels have been declining in many manufacturing industries including the forest industry, there remains a very direct relationship between direct and indirect employment and annual harvest levels. In 2006 data acquired from the Natural Resources Canada website (<a href="http://canadaforests.nrcan.gc.ca/">http://canadaforests.nrcan.gc.ca/</a>) the multiplier is approximately 4 direct and indirect jobs per 1000 m3 of harvest.</p> <p>Licencees that harvest at sustainable harvest levels in relation to the allocated supply levels determined by the Chief Forester continue to provide direct and indirect employment opportunities. The harvest level for the TSA, and TFL's 18 and 35, is set only after considering social, economic and biological criteria. More information on this rigorous process to determine allowable annual cut (AAC) levels can be found at the website: <a href="http://www.for.gov.bc.ca/hts/pubs/tsr/tsrbkg.htm">http://www.for.gov.bc.ca/hts/pubs/tsr/tsrbkg.htm</a></p>
Means of achieving objective and target	Licencees contribute to direct and indirect employment within the region and to sustainable harvesting by adhering to their apportioned harvest volume within the TSA. Cut control regulations dictate the short-term harvest flexibility. Track woodlands employees for direct employment related to the organizations practice of sustainable forest management.
<b>Forecast; Predicted Results or Outcome</b>	<p>Continuing to harvest at sustainable levels provides well paying jobs within the region. The existing harvest level (2000 baseline data):</p> <ul style="list-style-type: none"> <li>• the TSA (2,393,180 m3) can be maintained for 20 years</li> <li>• TFL 18 (177,650 m3) can be maintained for 5 years</li> <li>• TFL 35 (125,600 m3) can be maintained indefinitely</li> </ul> <p>All licencees are within the cut control variance set out by regulation. The net TSA volume harvested in 2000 was 2,996,147 cubic meters. For TFL 18 it was 174,763 and for TFL 35 it was 79,642 cubic meters.</p>
Forecast	<p>Short and long term harvest flows that reflect forest conditions, forest practices, and the socio-economic objectives of the Crown. (see indicator 2.2.2 for more detail on forecast).</p> <p>Forest organizations that harvest in relation to their allocation of the allowable annual cut thereby providing for employment and taxation revenue in local communities. Forestlands organization that is adequately staffed to practice sustainable forestry.</p>
<b>Target</b>	<p><b>16.</b> Harvest the annual cut allocation for the year consistent with the Cut Control Regulation and Policy.</p> <p><b>27.</b> Number of direct woodlands employees on payroll (track using full time equivalent person years to account for seasonal employees).</p>
Basis for the Target	Legal requirements.
Legal Requirements	Forest Act, Cut Control Regulation
<b>Monitoring &amp; Measurement</b> Periodic	The schedule for subsequent Timber Supply Reviews for the TSA and TFL's can be found at: <a href="http://www.for.gov.bc.ca/hts/schedule.htm">http://www.for.gov.bc.ca/hts/schedule.htm</a> .
Annual	<p><u>Target 16</u> Licencees will report the harvest level allocated for each licence and harvest level cut (cut control volume) for the past reporting year.</p> <p><u>Target 27</u> Licencees will report woodland employees on payroll (using FTE's)</p>
Variance	According to the Cut Control Regulation and Policy

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>5.2.4 Level of Aboriginal participation in the forest economy</b>
<b>Element(s)</b>	5.2 Communities and Sustainability
<b>Strategy(s) Description</b>	Forests represent not only a return on investment (measured, for example, in dollar value, person-days, donations, etc.) for the organization but also a source of income and non-financial benefits for DFA-related workers, local communities and governments. This indicator and related targets look specifically at First Nation participation in the forest economy, first to look at licensees' efforts to build capacity within First Nations on matters related to the forest industry and secondly to look at the percentage of the allocated harvest level in the TSA that has been awarded to First Nations.
Means of achieving objective and target	Licencees engage in building mutually beneficial relationships with Aboriginal peoples and participate in government discussions on any redistribution of tenure within the TSA.
<b>Forecast; Predicted Results or Outcome</b>	<u>Target 28</u> There were 42 working relationships with First Nations in the TSA area using previous measurement standard (2003 baseline data). <u>Target 29</u> Direct participation by First Nations in the sustainable harvest of forest resources. As this is a new target, the 2010 Monitoring Report results will be used to establish the baseline data.
Forecast	Operational activities and plans that recognize and manage for known aboriginal rights and duly established title. Licencees support First Nations in building organizational capacity. <ul style="list-style-type: none"> <li>As responsible stewards of public forest land, licencees engage in building mutually beneficial relationships with Aboriginal peoples.</li> </ul> Economic opportunities and benefits to local First Nation communities resulting from a secure source of forest tenure.
<b>Target</b>	<b>28.</b> Maintain and/or increase the number of working relationships (partnerships, joint ventures, cooperative agreements, memorandum of understanding, or business contracts) with First Nations. <b>29.</b> At least 10% of the TSA's AAC is allocated to First Nation ventures.
Basis for the Target	Developed by Licencees with First Nations Licencees engage in building mutually beneficial relationships with Aboriginal peoples. Access to forest tenure provides First Nations with direct control on how forests are sustainably managed and marketed.
Legal Requirements	Forest Act
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	<u>Target 28</u> Licencees will report on the number of working relationships with applicable First Nations (partnerships, joint ventures, co-operative agreements, memorandums of understanding, or business contracts over \$5,000 or over 500 cubic meters in volume) during the reporting year. Performance is based on a <b>three year rolling average</b> . 2006 performance target is achieved if the 04/05/06 average is $\geq$ to the 03/04/05 average. <i>Examples of a business contract include a work agreement or a direct timber sale with a First Nation Band or First Nation Contractor<sup>25</sup>. For consistency in reporting, count multiple work agreements with one band or contractor or direct sales with one band or contractor as a single business contract. For example, multiple work agreements or multiple direct sales would count as a single business contract if they occurred with the same band or contractor. Licencees will report this figure as a rolling three year average. For annual reporting, the information for the current year will be combined with the previous two years reporting, then averaged for the three years. Examples of working relationships will be provided to indicate possible trends in the types of these relationships.</i> <u>Target 29</u> Licencees report total AAC of any tenure issued under Section 12 of the Forest Act (forms of agreement) where First Nations are the license holder.
Variance	None

<sup>25</sup> First Nation Contractor is a company where one or more of the principles are of First Nations descent.

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights</b>
<b>Element(s)</b>	6.1 Aboriginal and Treaty Rights
<b>Strategy(s)</b> Description	<p>Section 35 of the <i>Constitution Act</i> states "The existing aboriginal and treaty rights of Aboriginal Peoples of Canada are hereby recognized and affirmed". Some examples of the rights that Section 35 has been found to protect include hunting, fishing, trapping, gathering, sacred and spiritual practices, and title. SFM requirements are not in any way intended to define, limit, interpret, or prejudice ongoing or future discussions and negotiations regarding these legal rights and do not stipulate how to deal with Aboriginal title and rights, and treaty rights.</p> <p>The first step toward respecting Aboriginal title and rights, and treaty rights is compliance with the law. Section 7.3.3 of the CSA Z809 Standard reinforces legal requirements for many reasons, including the reality that demonstrating respect for Aboriginal title and rights, and treaty rights can be challenging in Canada's fluid legislative landscape and therefore it is important to identify these legal requirements as a starting point. It is important for the organization to have an understanding of applicable Aboriginal title and rights, and treaty rights, as well as the Aboriginal interests that relate to the DFA.</p> <p>Both the desire of licensees to comply with laws and open communication with local First Nations ensures that there is a good understanding of Aboriginal title and rights.</p>
Means of achieving objective and target	Open communications with local First Nations. Written requests for communication are responded to.
<b>Forecast;</b> Predicted Results or Outcome	<p><u>Target 23:</u> Open communication and follow-up with local First Nations (2004 baseline data):</p> <ul style="list-style-type: none"> <li>• All licensees communicated with First Nations (42 meetings/meaningful communications)</li> <li>• Licensees responded to all written requests for communication.</li> </ul>
Forecast	Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local First Nations.
<b>Target</b>	<p><b>23.</b></p> <p>a. Open communications (track meetings and other meaningful communication) with local First Nations during Operational Plan reviews will include an understanding of traditional territories and other aboriginal rights including cultural and spiritual values.</p> <p>b. TSA Licensees respond to all written requests for communication from First Nations.</p>
Basis for the Target	Legal obligations, communication process developed by Licensees with First Nations
Legal Requirements	Constitution Act, Forest and Range Practices Act
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	<p>Licensees will report:</p> <p>a. Number of meetings and meaningful communications with First Nations that included management and protection of traditional knowledge, non-timber resources, and cultural and spiritual values.</p> <p>b. Number of written requests for communication from First Nations versus the number of responses made to First Nations. Reporting is on a one to one ratio (one response for each request).</p>
Variance	None

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans</b>
<b>Element(s)</b>	6.1 Aboriginal and Treaty Rights
<b>Strategy(s)</b> Description	The first step toward respecting Aboriginal title and rights, and treaty rights is compliance with the law. Section 7.3.3 of the CSA Z809 Standard reinforces legal requirements for many reasons, including the reality that demonstrating respect for Aboriginal title and rights, and treaty rights can be challenging in Canada's fluid legislative landscape and therefore it is important to identify these legal requirements as a starting point. It is important for the organization to have an understanding of applicable Aboriginal title and rights, and treaty rights, as well as the Aboriginal interests that relate to the DFA. Open communication with local First Nations includes not only the organization understanding the First Nations rights and interests but for First Nations to understand the forest management plans of organizations. With this open dialogue, the two parties can then best work towards plans and operations that mutually agreeable.
Means of achieving objective and target	Open communications with local First Nations during Plan reviews. Written requests for communication are responded to.
<b>Forecast;</b> Predicted Results or Outcome	<u>Target:</u> Open communication and follow-up with local First Nations (2004 baseline data): <ul style="list-style-type: none"> <li>• All licencees communicated with First Nations (42 meetings/meaningful communications)</li> <li>• Licencees responded to all written requests for communication.</li> </ul>
Forecast	Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local First Nations.
<b>Target</b>	<b>23.</b> <ol style="list-style-type: none"> <li>a. Open communications (track meetings and other meaningful communication) with local First Nations during Operational Plan reviews will include an understanding of traditional territories and other aboriginal rights including cultural and spiritual values.</li> <li>b. TSA Licencees respond to all written requests for communication from First Nations.</li> </ol>
Basis for the Target	Legal obligations, communication process developed by Licencees with First Nations
Legal Requirements	Constitution Act, Forest and Range Practices Act
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Licencees will report: <ol style="list-style-type: none"> <li>a. Number of meetings and meaningful communications with First Nations that included management and protection of traditional knowledge, non-timber resources, and cultural and spiritual values.</li> <li>b. Number of written requests for communication from First Nations versus the number of responses made to First Nations. Reporting is on a one to one ratio (one response for each request).</li> </ol>
Variance	None

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur</b>
<b>Element(s)</b>	6.1 Aboriginal and Treaty Rights
<b>Strategy(s)</b> Description	The first step toward respecting Aboriginal title and rights, and treaty rights is compliance with the law. Section 7.3.3 of the CSA Z809 Standard reinforces legal requirements for many reasons, including the reality that demonstrating respect for Aboriginal title and rights, and treaty rights can be challenging in Canada's fluid legislative landscape and therefore it is important to identify these legal requirements as a starting point. It is important for the organization to have an understanding of applicable Aboriginal title and rights, and treaty rights, as well as the Aboriginal interests that relate to the DFA. Open communication with local First Nations helps to ensure that areas of cultural importance are managed in a way that retains their traditions and values.
Means of achieving objective and target	Open communications with local First Nations during Plan reviews. Written requests for communication are responded to. Traditional knowledge, non-timber resources, and cultural and spiritual values are appropriately managed for and protected in licensee plans.
<b>Forecast; Predicted Results or Outcome</b>	<b>Target:</b> Open communication and follow-up with local First Nations (2004 baseline data): <ul style="list-style-type: none"> <li>• All licensees communicated with First Nations (42 meetings/meaningful communications)</li> <li>• Licensees responded to all written requests for communication.</li> <li>• Specific actions were taken on 21 cutblocks to manage for and protect traditional knowledge, non-timber resources, and/or cultural and spiritual values.</li> </ul>
Forecast	Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local First Nations.
<b>Target</b>	<b>23.</b> <ol style="list-style-type: none"> <li>a. Open communications (track meetings and other meaningful communication) with local First Nations during Operational Plan reviews will include an understanding of traditional territories and other aboriginal rights including cultural and spiritual values.</li> <li>b. TSA Licensees respond to all written requests for communication from First Nations.</li> <li>c. Incorporation of traditional knowledge, non-timber resources, and cultural and spiritual values in forest planning, where they have been identified, mapped and shared by willing aboriginal communities.</li> </ol>
Basis for the Target	Legal obligations, communication process developed by Licensees with First Nations
Legal Requirements	Constitution Act, Heritage Conservation Act, Forest and Range Practices Act
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Licencees will report: <ol style="list-style-type: none"> <li>a. Number of meetings and meaningful communications with First Nations that included management and protection of traditional knowledge, non-timber resources, and cultural and spiritual values.</li> <li>b. Number of written requests for communication from First Nations versus the number of responses made to First Nations. Reporting is on a one to one ratio (one response for each request).</li> <li>c. Number of cutblocks where traditional knowledge, non-timber resources, and cultural and spiritual values were identified, mapped and shared by willing aboriginal communities. And of those cutblocks, the number where specific actions were taken to manage for and/or protect that knowledge, resources, or values.</li> </ol>
Variance	None

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.2.1 Evidence of understanding and use of Aboriginal knowledge through the engagement of willing Aboriginal communities, using a process that identifies and manages culturally important resources and values</b>
<b>Element(s)</b>	6.2 Respect for Aboriginal Forest Values, Knowledge, and Uses
<b>Strategy(s) Description</b>	Meaningful relationships that forest organizations have with willing Aboriginal Peoples contribute to an understanding of traditional knowledge and values. Proper use of this information in forest plans and operations leads to their being managed and protected to the satisfaction of those communities. That meaningful relationship includes open communication with interested First Nations and demonstration of a process that leads to the identification of important cultural resources, sites, and values.
Means of achieving objective and target	Open communications with local First Nations during Plan reviews. Written requests for communication are responded to. Traditional knowledge, non-timber resources, and cultural and spiritual values are appropriately managed for and protected in licensee plans. Participation in a process that assesses the potential for occurrence of cultural heritage resources and direct more detailed assessments in areas of moderate or high potential where forestry operations are planned.
<b>Forecast; Predicted Results or Outcome</b>	<b>Target 23:</b> Open communication and follow-up with local First Nations (2004 baseline data): <ul style="list-style-type: none"> <li>• All licensees communicated with First Nations (42 meetings/meaningful communications)</li> <li>• Licensees responded to all written requests for communication.</li> <li>• Specific actions were taken on 21 cutblocks to manage for and protect traditional knowledge, non-timber resources, and/or cultural and spiritual values.</li> </ul> <b>Target 12:</b> Participation with First Nations on the implementation of the Archaeological Overview Assessment model and process. All licensees participated in the implementation (2003 baseline data).
Forecast	Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local First Nations.
<b>Target</b>	<b>23.</b> <ol style="list-style-type: none"> <li>a. Open communications (track meetings and other meaningful communication) with local First Nations during Operational Plan reviews will include an understanding of traditional territories and other aboriginal rights including cultural and spiritual values.</li> <li>b. TSA Licensees respond to all written requests for communication from First Nations.</li> <li>c. Incorporation of traditional knowledge, non-timber resources, and cultural and spiritual values in forest planning, where they have been identified, mapped and shared by willing aboriginal communities.</li> </ol> <b>12.</b> TSA Licensees will participate with First Nations to implement and improve upon the revised Archaeological Overview Assessment model and process.
Basis for the Target	Legal obligations, communication process developed by Licensees with First Nations. An effective model will facilitate planning while effectively conserving and protecting First Nations values.
Legal Requirements	Constitution Act, Heritage Conservation Act, Forest and Range Practices Act
<b>Monitoring &amp; Measurement</b>	
Periodic	
Annual	<b>Target 23</b> Licensees will report: <ol style="list-style-type: none"> <li>a. Number of meetings and meaningful communications with First Nations that included management and protection of traditional knowledge, non-timber resources, and cultural and spiritual values.</li> <li>b. Number of written requests for communication from First Nations versus the number of responses made to First Nations. Reporting is on a one to one ratio (one response for each request).</li> <li>c. Number of cutblocks where traditional knowledge, non-timber resources, and cultural and spiritual values were identified, mapped and shared by willing aboriginal communities. And of those cutblocks, the number where specific actions were taken to manage for and/or protect that knowledge, resources, or values.</li> </ol> <b>Target 12</b> Licensees will report on the number of cutblocks where an AOA was conducted and on the number of cutblocks where the AOA included a field visit.
Variance	None



## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.3.1 Evidence that the organization has co-operated with other forest-dependent businesses, forest users, and the local community to strengthen and diversify the local economy</b>
<b>Element(s)</b>	6.3 Forest Community well-being and resilience
<b>Strategy(s) Description</b>	An economically and socially diverse community is often more sustainable in the long term. Support of efforts to increase diversity, the establishment of other enterprises and co-operation with other forest-dependent businesses and forest users is desirable. While there is limited information on the ecological services and non-timber benefits produced in the DFA, it is important to consider their contribution to community well being and resilience. Some of these goods and services include the ranching and trapping industries. Support for local communities through business relationships provides employment diversification and increased local revenue.
<b>Means of achieving objective and target</b>	Communication to occur with ranchers and trappers to discuss forest plans and operations. Completion of visual quality assessments where operations are planned within scenic areas. Licensees seek and maintain active, mutually beneficial business relationships with other forest products businesses in the TSA and vicinity.
<b>Forecast; Predicted Results or Outcome</b>	<u>Target 21</u> – Annual meetings with affected ranchers: Ninety-two percent of ranchers affected by planned operations were communicated with during the reporting period compared to a target of 90 percent (2001 baseline data). <u>Target 22</u> – Effective communication with trappers: As this is a new target, 2010 Monitoring Report results will be used to establish the baseline data. <u>Target 25</u> – Meeting visual quality objectives: Harvesting met visual quality objectives in 182/183 cutblocks (2000 baseline data). <u>Target 30</u> – Value added and business initiatives/partnerships potentially benefitted by log and lumber sales: As this is a new target, 2010 Monitoring Report results will be used to establish the baseline data.
<b>Forecast</b>	Minimize the tree/grass/cattle conflicts through integrated and co-operative management practices. Minimize the impact of harvest operations on fur bearing animals. Visual quality within scenic areas reflects social preferences. Support for local communities through business relationships provides employment diversification and increased local revenue.
<b>Target</b>	<b>21.</b> Where forest operations are planned within range units, the forest licensee will communicate with the rancher in advance of those operations to minimize impacts to affected ranchers. <b>22.</b> Communication of forest operations to occur with trappers 100% of the time in advance of operations (see annual reporting requirements on how this indicator is applied). <b>25.</b> 100% conformance to strategies in plans designed to achieve preservation, and partial retention visual quality objectives. <b>30.</b> Support local communities by maintaining active involvement with local (within Kamloops TSA) log/lumber value-added and business initiatives/partnerships.
<b>Basis for the Target</b>	Essential that holders of varying land use tenures on the same land base communicate regularly. Legal requirements. Business initiatives and partnerships, built on sound business principles, are not only beneficial to the partners, but also to the economy and vitality of the TSA.
<b>Legal Requirements</b>	Forest and Range Practices Act, Forest Planning and Practices Regulation
<b>Monitoring &amp; Measurement</b> Periodic	

## 4.0 Indicators and Indicator Matrices

Annual	<p><u>Target 21</u> Licensees will report percent of ranchers affected by planned operations that were communicated with during the reporting period.</p> <p><u>Target 22</u> Where trappers holding a registered trapline advise forest licensees of the areas that they will be active in a given year and seek to understand what forest operations might be occurring for that year, licensees will report if they communicated with that trapper their planned forest operations.</p> <p>Should a forest licensees plans change during that year such that operations will be conducted in areas not originally discussed (excluding areas discussed in general and identified as not being of concern to the trapper regardless of any operations taking place), companies will report if they made a concerted effort to contact that trapper and inform them of those operations.</p> <p><u>Target 25</u> Licensees will report on the number of harvested blocks that achieve the visual intent as described in plans versus the number of blocks harvested within the past year that had preservation, retention or partial retention visual quality objectives.</p> <p><u>Target 30</u> Licensees (except BCTS) will report:</p> <ul style="list-style-type: none"> <li>• total volume of logs sold within the TSA</li> <li>• log-volume equivalent (m3) of any lumber sales within the Kamloops TSA (using the appropriate conversion/recovery factor)</li> <li>• number of parties logs/lumber sold to</li> </ul> <p>BCTS will report:</p> <ul style="list-style-type: none"> <li>• number of value-added scale-sites and related volumes within the TSA receiving logs from sales within the TSA</li> </ul>
Variance	<p><u>Target 21</u> 10%</p> <p><u>Target 22</u> 5%</p> <p><u>Target 25</u> None</p> <p><u>Target 30</u> n/a</p>

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.3.2 Evidence of co-operation with DFA-related workers and their unions to improve and enhance safety standards, procedures, and outcomes in all DFA-related workplaces and affected communities</b>
<b>Element(s)</b>	6.3 Forest Community well-being and resilience
<b>Strategy(s)</b> Description	<p>The BC Forest Safety Council was created in September 2004 after the release eight months earlier of a unanimous report from the provincial government's Forest Safety Task Force. The mandate of the task force had been to set out a comprehensive strategy to reduce high levels of injuries and fatalities in the forest sector. Its membership consisted of representatives of companies, unions, independent contractors, forestry associations and the Workers' Compensation Board of B.C. (since renamed WorkSafe BC).</p> <p><b>SAFE Companies</b> is the flagship program of the BC Forest Safety Council, certifying B.C. forestry operations that show a commitment to safety and demonstrate, through audits, that their safety programs meet industry standards. This earns SAFE-certification status for companies of all sizes, from individual owner operators to the largest firms. More information is available at: <a href="http://www.bcforestsafesafe.org/index.html">http://www.bcforestsafesafe.org/index.html</a></p> <p>Effective January 1, 2009, certification became a pre-requisite to bid on BCTS contracts. The Ministry's Forests For Tomorrow program also requires SAFE certification for its agreement holders.</p> <p>Licencees that subscribe to the SAFE Company program demonstrate a commitment to forest workers that they go home safely to their families at the end of each work day.</p>
Means of achieving objective and target	Licencees require those who conduct forest operations be SAFE Company or equivalent registered and/or certified.
<b>Forecast;</b> Predicted Results or Outcome	Forest workers who safely execute their work assignments. As this is a new target, 2010 Monitoring Report results will be used to establish the baseline data.
Forecast	From 1998 to 2005, WorkSafe BC accepted an average of nearly 22 harvesting fatality claims each year — the worst in 2005 with 34 claims. But the industry averaged fewer than 14 fatalities from 2006 to 2008. While this 35-per-cent reduction is a step in the right direction, no fatality is acceptable. Companies and contractors who are SAFE Company or equivalent certified demonstrate the efforts to make safety integral to each worker's life, and that unsafe is unacceptable.
<b>Target</b>	<b>31.</b> A minimum of 80% of contractors conducting on the ground work that are SAFE Company or equivalent registered and/or certified. And for BCTS, that a minimum of 80% of licences or contracts awarded were SAFE Company or equivalent registered and/or certified.
Basis for the Target	Continuously improve forest worker safety record.
Legal Requirements	Workers Compensation Act
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Licencees will report: Number of on the ground contractors in total working in the Kamloops - North Thompson and the number of those that are SAFE Company registered and/or certified. For BCTS, report the number of licences and contracts awarded that required Safe Company or equivalent certification as well as the total licences/contracts awarded.
Variance	None

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved</b>
<b>Element(s)</b>	6.3 Forest Community well-being and resilience
<b>Strategy(s)</b> Description	<p>The BC Forest Safety Council was created in September 2004 after the release eight months earlier of a unanimous report from the provincial government's Forest Safety Task Force. The mandate of the task force had been to set out a comprehensive strategy to reduce high levels of injuries and fatalities in the forest sector. Its membership consisted of representatives of companies, unions, independent contractors, forestry associations and the Workers' Compensation Board of B.C. (since renamed WorkSafe BC).</p> <p><b>SAFE Companies</b> is the flagship program of the BC Forest Safety Council, certifying B.C. forestry operations that show a commitment to safety and demonstrate, through audits, that their safety programs meet industry standards. This earns SAFE-certification status for companies of all sizes, from individual owner operators to the largest firms. More information is available at: <a href="http://www.bcforestsafesafe.org/index.html">http://www.bcforestsafesafe.org/index.html</a></p> <p>Effective January 1, 2009, certification became a pre-requisite to bid on BCTS contracts. The Ministry's Forests For Tomorrow program also requires SAFE certification for its agreement holders.</p> <p>Licencees that subscribe to the SAFE Company program demonstrate a commitment to forest workers that they go home safely to their families at the end of each work day.</p>
Means of achieving objective and target	Licencees subscribe to the SAFE Company program.
<b>Forecast; Predicted Results or Outcome</b>	Forest companies who demonstrate leadership and commitment to having a safe work environment. As this is a new target, 2010 Monitoring Report results will be used to establish the baseline data.
Forecast	From 1998 to 2005, WorkSafe BC accepted an average of nearly 22 harvesting fatality claims each year — the worst in 2005 with 34 claims. But the industry averaged fewer than 14 fatalities from 2006 to 2008. While this 35-per-cent reduction is a step in the right direction, no fatality is acceptable. Companies and contractors who are SAFE Company or equivalent certified demonstrate the efforts to make safety integral to each worker's life, and that unsafe is unacceptable.
<b>Target</b>	<b>32.</b> All forest companies/organizations subscribing to the SFM Plan are SAFE Company or equivalent registered and/or certified.
Basis for the Target	Continuously improve forest worker safety record.
Legal Requirements	Workers Compensation Act
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Licencees will report: A yes/no answer as to whether they are SAFE Company or equivalent registered and/or certified.
Variance	none

#### 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.4.1 Level of participant satisfaction with the public participation process</b>
<b>Element(s)</b>	6.4 Fair and Effective Decision Making
<b>Strategy(s) Description</b>	<p>The SFM Advisory Group was formed to assist the TSA Licensees in developing the SFM Plan by identifying local values, objectives, indicators and targets and evaluating the effectiveness of the Plan. The SFM Plan is an evolving document that will be reviewed and revised on an annual basis with the SFM Advisory Group to address changes in forest condition and local community values.</p> <p>Ensuring the continuing interest and participation of this important Group is a Licensee priority. The ability of people to share information, discuss and solve problems, and set and meet objectives is key to achieving and maintaining meaningful participation.</p>
Means of achieving objective and target	Licensees provide all Advisory Group members, and interested public who have shown notable interest (written comments or SFM Plan meeting attendance) during the year, a feedback form (survey) to assess their satisfaction with the process. All survey questions will have a 1-5 scoring assessment(1 being poor or ineffective and 5 being excellent or highly effective).
<b>Forecast; Predicted Results or Outcome</b>	<p>Satisfied advisory group (2004 baseline data)</p> <p>a. Survey response was an average of 3.9 out of five 5. There were 14 respondents to the survey.</p> <p>b. Results of the feedback form were compiled and are reported as part of the annual monitoring program in Appendix II of the Monitoring Report.</p>
Forecast	Active, engaged Public Advisory Group
<b>Target</b>	<p><b>33.</b></p> <p>a. 80% of survey responses “3” or better</p> <p>b. All written comments are reviewed and considered, and all line responses averaging less than 3 become action items</p>
Basis for the Target	Ensure issues are identified discussed and where possible, resolved. Advisory Group process is being continuously improved.
Legal Requirements	NA
<b>Monitoring &amp; Measurement Periodic</b>	
Annual	<p>a. Survey responses coded 1 (poor), 2, 3 (satisfactory), 4, 5 (well done)</p> <p>b. Results of feedback form compiled and reported as part of annual monitoring program.</p>
Variance	None

#### 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general</b>
<b>Element(s)</b>	6.4 Fair and Effective Decision Making
<b>Strategy(s) Description</b>	The ability of people to share information, discuss and solve problems, and set and meet objectives is key to achieving and maintaining meaningful participation. Many types of initiatives (e.g., two-way information exchanges, educational opportunities) can be used to help promote meaningful participation. This indicator and target recognizes the importance of providing opportunities for members of the public, as well as First Nations, to provide input into forestry planning. Open lines of communication allow forest licencees to maintain an awareness of social values and concerns and to respond accordingly. Members of the public and First Nations can also provide local knowledge that contributes to socially and environmentally responsible forest management.
Means of achieving objective and target	Licencees are committed to work with members of the public on forest management issues and to improve the effectiveness of public processes. Licencees will provide opportunities/avenues for public participation in decision-making processes through participation in committees, meetings, and plan discussions. Licencees respond to all written requests from the public for communication.
<b>Forecast; Predicted Results or Outcome</b>	Effective public communication (2000 baseline data): a. Public participation <ul style="list-style-type: none"> <li>• Licencee's interests were represented at KLRMP meetings.</li> <li>• 66% of LRUP meetings were attended (this is below the target of 70% but within the variance of 60% of meetings attended);</li> <li>• A total of 12 community meetings were attended.</li> </ul> b. All written requests (3) for communication were responded to.
Forecast	Public participation in forest planning and operations that is open, inclusive and responsive to public concerns.
<b>Target</b>	<b>24.</b> a. TSA Licencees will demonstrate efforts by participating in public multi-stakeholder meetings at both the strategic KLRMP level (interests represented at every meeting) and at the local level (participation in a minimum of 60% of Local Resource Use Plan meetings). Licencees will also report on the number of community meetings held or attended. b. TSA Licencees respond to all written requests from the public for communication within 30 days of their receipt.
Basis for the Target	Developed by Licencees with the Public Advisory Group.
Legal Requirements	n/a
<b>Monitoring &amp; Measurement</b>	
Periodic	
Annual	a. A yes/no answer as to whether their interests were represented at KLRMP meetings, the number of LRUP meetings attended against the number held within their operating area. They will also report the number of community meetings held or attended during the reporting period. b. Number of responses sent out by licencees compared to the number of written requests for communication. Report the average timeline for response.
Variance	None

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities</b>
<b>Element(s)</b>	6.4 Fair and Effective Decision Making
<b>Strategy(s) Description</b>	The ability of people to share information, discuss and solve problems, and set and meet objectives is key to achieving and maintaining meaningful participation. Many types of initiatives (e.g., two-way information exchanges, educational opportunities) can be used to help promote meaningful participation. Open lines of communication allow forest licencees to maintain an awareness of social values and concerns and to respond accordingly. First Nations members can also provide local knowledge that contributes to socially and environmentally responsible forest management. This indicator and related targets look specifically at First Nation participation in the forest economy: to look at open communications, licencees' efforts to build capacity within First Nations on matters related to the forest industry and to look at the percentage of the allocated harvest level in the TSA that has been awarded to First Nations.
Means of achieving objective and target	Licencees engage in building mutually beneficial relationships with Aboriginal peoples and participate in government discussions on any redistribution of tenure within the TSA.
<b>Forecast; Predicted Results or Outcome</b>	<u>Target 23</u> Open communication and follow-up with local First Nations (2004 baseline data): <ul style="list-style-type: none"> <li>All licencees communicated with First Nations (42 meetings/meaningful communications)</li> <li>Licencees responded to all written requests for communication.</li> </ul> <u>Target 28</u> There were 42 working relationships with First Nations in the TSA area using previous measurement standard (2003 baseline data). <u>Target 29</u> Direct participation by First Nations in the sustainable harvest of forest resources. As this is a new target, the 2010 Monitoring Report results will be used to establish the baseline data.
Forecast	Economic opportunities and benefits to local First Nation communities resulting from a secure source of forest tenure, open communication and support in capacity building.
<b>Target</b>	<b>23.</b> Open communications: <ol style="list-style-type: none"> <li>Open communications (track meetings and other meaningful communication) with local First Nations during Operational Plan reviews will include an understanding of traditional territories and other aboriginal rights including cultural and spiritual values.</li> <li>TSA Licencees respond to all written requests for communication from First Nations.</li> </ol> <b>28.</b> Maintain and/or increase the number of working relationships (partnerships, joint ventures, cooperative agreements, memorandum of understanding, or business contracts) with First Nations. <b>29.</b> At least 10% of the TSA's AAC is allocated to First Nation ventures.
Basis for the Target	Communications process developed by Licencees with First Nations. Licencees engage in building mutually beneficial relationships with Aboriginal peoples. Access to forest tenure provides First Nations with direct control on how forests are sustainably managed and marketed.
Legal Requirements	Forest Act, Forest and Range Practices Act
<b>Monitoring &amp; Measurement</b>	
Annual	<u>Target 23</u> Licencees will report: <ol style="list-style-type: none"> <li>Number of meetings and meaningful communications with First Nations that included management and protection of traditional knowledge, non-timber resources, and cultural and spiritual values.</li> <li>Number of written requests for communication from First Nations versus the number of responses made to First Nations. Reporting is on a one to one ratio (one response for each request).</li> </ol> <u>Target 28</u> Licencees will report on the number of working relationships with applicable First Nations (partnerships, joint ventures, co-operative agreements, memorandums of understanding, or business contracts over \$5,000 or over 500 cubic meters in volume) during the reporting year. Examples of a business contract include a work agreement or a direct timber sale with a First Nation Band or First Nation Contractor <sup>26</sup> . For consistency in reporting, count multiple work agreements with one band or contractor or direct sales with one band or contractor as a single business contract. For example, multiple work agreements or multiple direct sales would count as a single business contract if they occurred with the same band or contractor. Licencees will report this figure as a rolling three year average. For annual reporting, the information for the current year will be combined with the previous two years reporting, then averaged for the three years. Examples of working relationships will be provided to indicate possible trends in the types of these relationships. <u>Target 29</u> Licencees report total AAC of any tenure issued under Section 12 of the Forest Act (forms of agreement) where First Nations are the license holder.
Variance	None

<sup>26</sup> First Nation Contractor is a company where one or more of the principles are of First Nations descent.

## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.5.1 Number of people reached through educational outreach</b>
<b>Element(s)</b>	6.5 Information for Decision-Making
<b>Strategy(s) Description</b>	Organizations and the public provide and receive information through interactions with each other. The sharing of learnings and opinions contributes to balanced decisions and plans acceptable to the majority of public.
Means of achieving objective and target	Licencees will be involved with educational support to ensure the importance of resource management is conveyed. In addition to direct actions by licencees and their employees, additional outside resources including the sharing of information on the website: <a href="http://thompsonokanaganustainableforestry.ca/kamloops_top.htm">http://thompsonokanaganustainableforestry.ca/kamloops_top.htm</a> may be used to achieve the target.
<b>Forecast; Predicted Results or Outcome</b>	Classroom visits. There were 35 classroom visits from the licencees in the reporting period (2000 baseline data).
Forecast	An educated and informed public with a broad understanding of forestry that can provide local input into forest planning and operations.
<b>Target</b>	<b>34.</b> The TSA Licencees will maintain educational support that leads to a balanced and broad-based understanding of forestry. One focus is forestry programs at the elementary, secondary and post-secondary levels. Target 40 actions per year (visits, field trips, information provision, etc).
Basis for the Target	An informed, educated public.
Legal Requirements	NA
<b>Monitoring &amp; Measurement</b>	
Periodic	
Annual	Licencees will report on the number of presentations or field trips to schools, public groups and individuals during the reporting year.
Variance	None



## 4.0 Indicators and Indicator Matrices

<b>Indicator</b>	<b>6.5.2 Availability of summary information on issues of concern to the public</b>
<b>Element(s)</b>	6.5 Information for Decision-Making
<b>Strategy(s) Description</b>	Organizations and the public provide and receive information through interactions with each other. The sharing of learnings and opinions contributes to balanced decisions and plans acceptable to the majority of public. The targets recognize the importance of research and extension activities and of keeping members of the public informed on forestry strategies being developed and planning occurring in their area. Adaptive management on Crown lands as a result of new science and changing public expectations requires open lines of communication and an opportunity for public input. Building capacity within First Nations assists in their contributions towards sustainable forest management.
<b>Means of achieving objective and target</b>	Licencees cooperatively manage a web site dedicated to providing the latest SFM Plan information, providing topical forestry information and links to other sources. Licencees respond to all written requests from the public. Licencees develop and distribute the SFM Plan and performance results to the public annually, including a summary of research and extension initiatives. Licencees engage in building mutually beneficial relationships with Aboriginal peoples.
<b>Forecast; Predicted Results or Outcome</b>	<u>Target 35</u> Public awareness (2004 baseline data) a. Licencees report that the web site is being maintained and the SFM Plan and other related information was made publicly available in the last year. b. Licencees received 9 written requests for communication. 9 responses were sent. The average timeline for responses was 11 days. <u>Target 36</u> Research and extension (2004 baseline data) a. Licencees were directly or indirectly represented on the Forest Research Extension Partnership (FORREX). b. Licencees were directly or indirectly represented in TSA Committee's annual approval of research investment programs and strategies. <u>Target 29</u> Direct participation by First Nations in the sustainable harvest of forest resources. As this is a new target, the 2010 Monitoring Report results will be used to establish the baseline data.
<b>Forecast</b>	Public awareness and understanding of the SFM Plan. A continuously improving SFM Plan that has openly informed, included and responded to the public – one that is supported by ongoing monitoring and research.. Economic and educational opportunities and benefits to local First Nation communities resulting from a secure source of forest tenure.
<b>Target</b>	<b>35.</b> a. Licencees will keep members of the public informed of TSA strategies being developed, and planning occurring by: <ul style="list-style-type: none"> <li>• Maintaining a website</li> <li>• Circulating SFM Plan and other information to the public at least annually (news release/leaflet/open house/Local Resource Use Plan etc.)</li> </ul> b. TSA Licencees respond to all written requests from the public for communication within 30 days of their receipt. <b>36.</b> a. TSA licencees will participate in research and extension activities. b. Identify priorities for reinvestment in the forest sector through the TSA committee annual review and support of research programs and strategies. <b>29.</b> At least 10% of the TSA's AAC is allocated to First Nation ventures.
<b>Basis for the Target</b>	Developed by Licencees in consultation with the Public Advisory Group and/or First Nations. Reinforces that a flexible management system that is adaptive to new information and feedback from monitoring processes is an important aspect of effective sustainable forest management over the long term
<b>Legal Requirements</b>	Forest Act
<b>Monitoring &amp; Measurement Periodic</b>	
<b>Annual</b>	<u>Target 35</u> a. Licencees will report a yes/no answer as to whether the web site is being maintained, and whether SFM Plan and other information were made publicly available in the last year. b. Licencees will report on the number of responses sent out by licencees compared to the number of written requests for communication. Report the average timeline for response. <u>Target 36</u> a. Licencees will report a yes/no answer with respect to their direct or indirect representation on the Forest Research Extension Partnership. b. Licencees will report a yes/no answer as to whether their TSA wide research results were shared with members of the public advisory group. Licencees will provide an indication of the type of research that is being undertaken and the value and applicability of this research to sustainable forest management. <u>Target 29</u> Licencees report total AAC of any tenure issued under Section 12 of the Forest Act (forms of agreement) where First Nations are the license holder.
<b>Variance</b>	None

4.0 Indicators and Indicator Matrices

# Glossary of Terms

## 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).

## **Glossary of Terms**

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**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)

	<b>Resource</b>	<b>Value</b>
<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-Z809-08)

**Forest operations:** includes timber harvesting, road construction, site preparation and road deactivation.

**Forest resources:** all resources and values associated with forests including timber, water, wildlife, fisheries, recreation, tourism and biological diversity.

**Indicator:** a variable that measures or describes the state or condition of a value. (CAN/CSA-Z809-08)

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

**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

## **Glossary of Terms**

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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** – operational plans 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.

**Permanent access structure:** means an access structure in a cutblock that

- (a) at the time of its construction, is reasonably expected to provide access for timber harvesting and other activities that are not wholly contained in the cutblock, or
- (b) is constructed on or through, or contains, materials unsuitable for the establishment of a commercial crop of trees and is not an excavated or bladed trail. (*Forest Planning and Practices Regulation*)

**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. (NRCAN The State of Canada’s Forests 2007)

**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 (CAN/CSA-Z809-08)



**Appendix 1  
Canfor Vavenby  
Defined Forest Area Map**

## **Appendix 2 – Wildlife Species at Risk**

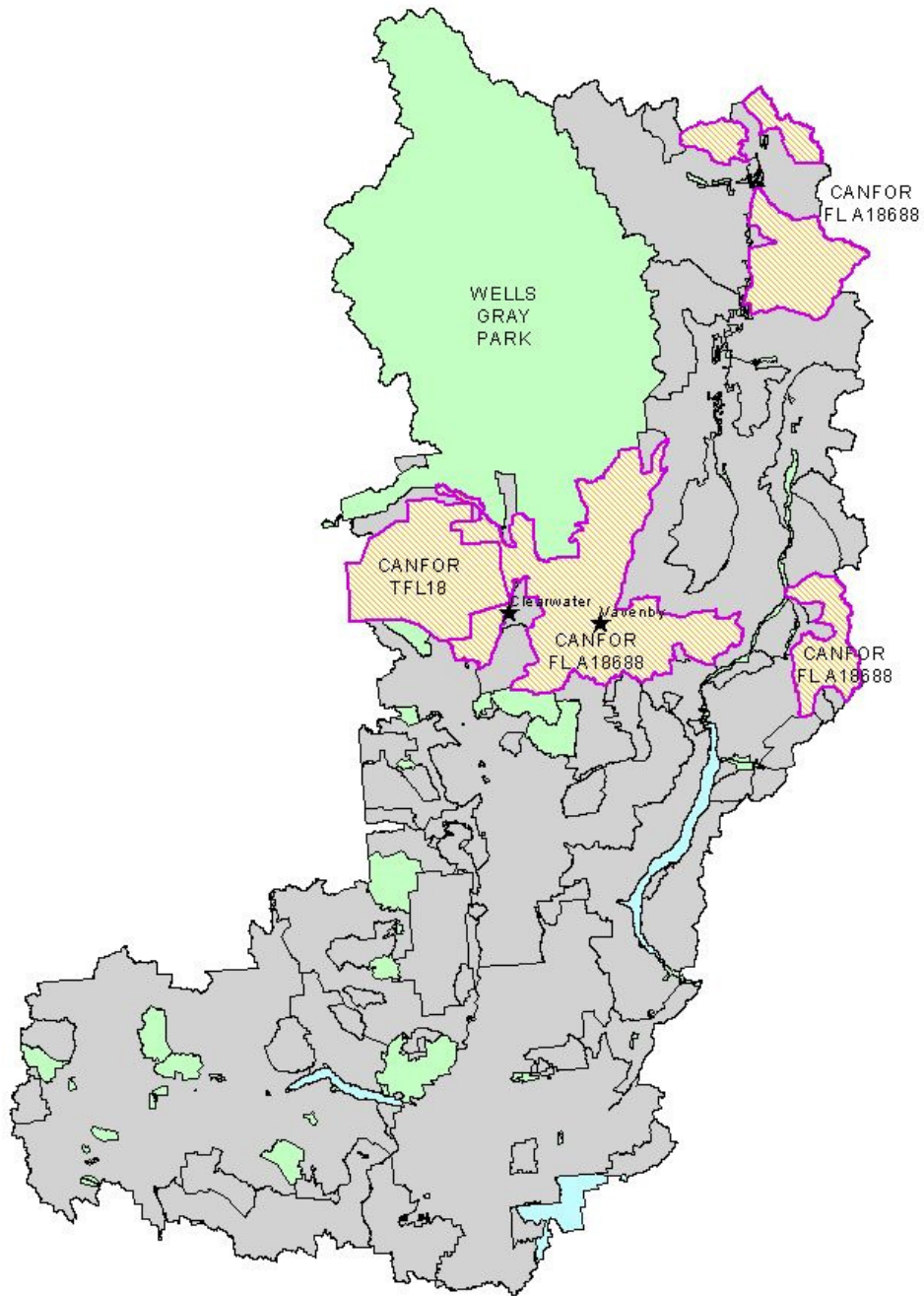
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### **Appendix 1: Canfor Vavenby Defined Forest Area Map**



## Appendix 2 – Wildlife Species at Risk

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**Appendix 2  
Wildlife Species at Risk**

## Appendix 2 – Wildlife Species at Risk

English Name	BC List	Identified Wildlife	SARA
Badger	Red	Y (May 2004)	1
Bighorn Sheep	Blue	Y (Jun 2006)	
Brewer's Sparrow, <i>breweri</i> subspecies	Red	Y (Jun 2006)	
Bull Trout	Blue	Y (Jun 2006)	
Burrowing Owl	Red	Y (May 2004)	1
Caribou (southern population)	Red	Y (May 2004)	1
Cutthroat Trout, <i>lewisi</i> subspecies	Blue	Y (Jun 2006)	
Fisher	Blue	Y (Jun 2006)	
Flammulated Owl	Blue	Y (May 2004)	1
Fringed Myotis	Blue	Y (May 2004)	3
Gopher Snake, <i>deserticola</i> subspecies	Blue	Y (May 2004)	1
Great Basin Spadefoot	Blue	Y (May 2004)	1
Great Blue heron, <i>herodias</i> subspecies	Blue	Y (Jun 2006)	
Grizzly Bear	Blue	Y (May 2004)	
Lewis's Woodpecker	Red	Y (May 2004)	1
Long-billed Curlew	Blue	Y (May 2004)	1
Monarch	Blue		1
Peregrine Falcon, <i>anatum</i> subspecies	Red		1
Prairie Falcon	Red	Y (Jun 2006)	
Racer	Blue	Y (Jun 2006)	1
Rusty Blackbird	Blue		1
Sage Thrasher	Red	Y (May 2004)	1
Sharp-tailed Grouse, <i>columbianus</i> subspecies	Blue	Y (Jun 2006)	
Short-eared Owl	Blue	Y (May 2004)	3
Spotted Bat	Blue	Y (May 2004)	1
Western Painted Turtle - Intermountain - Rocky Mtn. Population	Blue		1
Western Rattlesnake	Blue	Y (Jun 2006)	1
Western Screech-Owl, <i>macfarlanei</i> subspecies	Red	Y (May 2004)	1
White Sturgeon (Upper Fraser River population)	Red		1
Williamson's Sapsucker, <i>thyroideus</i> subspecies	Red	Y (Jun 2006)	1
Wolverine, <i>luscus</i> subspecies	Blue	Y (May 2004)	

Data from BC Ecosystems Explorer: <http://a100.gov.bc.ca/pub/eswp/>

Current as of December, 2009

Includes species with provincial conservation status of Red and Blue, plus provincially and federally listed species.

**Appendix 3**  
**SFM Plan Reporting Format**

## **Appendix 3 – SFM Plan Reporting Format**

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### **Appendix 3: SFM Plan reporting format**

Following is the format that licensees will use when reporting the results of monitoring the SFM Plan. Licensees provide the information required in the form annually. Information from individual licensees is compiled into a TSA Annual Monitoring Report. The Monitoring Report contributes to an annual review to confirm that the CSA performance measures are being met. The SFM Advisory Group reviews and comments on the Monitoring Report.



## Kamloops - North Thompson Sustainable Forest Management Plan Annual Report

Name of licensee: \_\_\_\_\_

Reporting year: \_\_\_\_\_

<b>Tar #</b>	<b>Indicators</b> (that target applies to)	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>1</b>	1.1.1	<p>Target: Maintain the presence and representative area of Biogeoclimatic Zones to the subzone level within the Plan area.</p> <p>Reporting: Part of periodic Timber Supply Review (TSR) - used to define of Analysis Units for timber supply modeling. Licensees will report the area for all Biogeoclimatic subzones as updated for the most current TSR for the TSA. Reporting to occur periodically – in the year following completion of subsequent TSR’s and determination of the allowable annual cut.</p>	Periodic reporting following TSR.
<b>2</b>	1.1.2, 1.3.3, 2.1.1	<p>Target: There will be no net loss in the percent of land base for broad leaf species.</p> <p>Reporting: Licensees will report the area of broad leaf species as updated for the most current TSR for the TSA. Reporting to occur periodically – in the year following completion of subsequent TSR’s and determination of the allowable annual cut.</p>	Periodic reporting following TSR.

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> (that target applies to)	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>3</b>	1.1.2, 1.3.4	<p>Target:</p> <p>(a) 70 percent of cutblocks harvested will have three or more tree species (includes conifer and deciduous comprising one percent or more of total trees) in the free growing survey (all Biogeoclimatic Zones except ESSF).</p> <p>(b) 70 percent of cutblocks harvested will have two or more tree species (includes conifer and deciduous comprising one percent or more of total trees) in the free growing survey (ESSF only).</p> <p>Reporting: On areas declared free growing in the reporting year, licencees will use the inventory label to determine areas having 3 or more species (non ESSF) or 2 or more species (ESSF). Licensees will also identify the average percent for the leading species on those areas having 3 or more species.</p>	<p>Cutblocks with at least three (non ESSF) or two (ESSF) species: _____</p> <p>Cutblocks achieving free growing status: _____</p> <p>% cutblocks with at least three (non ESSF) or two (ESSF) or more species: _____</p> <p>% primary species (average) for cutblocks with three or more tree species _____</p>
<b>Tar #</b>	<b>Indicators</b> (that target applies to)	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>4</b>	1.1.3, 4.1.1	<p>Target: Progress towards a stable forest age class distribution on the timber harvesting land base where each age class to 100 years old [1 (1 to 20), 2 (21-40), 3 (41-60), 4 (61 to 80) and 5 (81 to 100)] occupies at least 8.5% of the timber harvesting land base. Three age classes meet this target within 50 years.</p> <p>Reporting: Licencee report the current age class distribution as last reported by a Timber Supply Review.</p> <p>Reporting to occur periodically – in the year following completion of subsequent TSR's and determination of the allowable annual cut.</p> <p>Current status and future forecast of age class distribution is provided as part of Timber Supply Review completed periodically.</p>	<p>Periodic reporting following TSR.</p>



## Appendix 3 – SFM Plan Reporting Format

Tar #	Indicators (that target applies to)	Monitoring parameter	Monitoring results
5	1.1.4	<p>Target:</p> <p>a. 80 percent of cutblocks greater than 10 hectares will have individual wildlife trees/stubs and/or wildlife tree patches within the block.</p> <p>b. Of the blocks that have individual wildlife trees/stubs and/or wildlife tree patches; at least 50 percent of the time these blocks will have dispersed individual trees, stubs or small (&lt;0.25 ha) patches retained.</p> <p>Reporting:</p> <p>a. Licencees will report, for cutblocks greater than 10 hectares, the number of cutblocks with wildlife tree patches and/or individual trees/stubs within the cutblock versus the total number of cutblocks greater than 10 ha in size upon completion of harvest, during the reporting year.</p> <p>b. On the blocks that do have individual wildlife trees/stubs and/or associated wildlife tree patches, licencees will also report the percentage of blocks that had dispersed individual trees, stubs or small (&lt;0.25 ha) patches.</p> <p>Reporting against target “b” is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.</p>	<p>a. i) Total number of cutblocks harvested &gt; 10 ha _____</p> <p>ii) Number of cutblocks &gt; 10 ha with WTP/WT/Stub _____</p> <p>b. Of blocks in ii above, number of blocks with dispersed individual trees, stubs or small (&lt;0.25 ha) patches _____</p> <p>Percent (ii÷b×100) _____</p> <p><i>NB: performance is to be reviewed against the Targets, the variance will be noted if the Targets are not met</i></p>

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> <small>(that target applies to)</small>	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>6</b>	1.2.1, 1.3.2	<p>Target: Proactive habitat protection targets established in accordance with non-legally binding guidelines and best practices:</p> <ul style="list-style-type: none"> <li>• On an annual basis, obtain from the Conservation Data Centre, the location of known Red-listed or Blue-listed species within the TSA.</li> <li>• Where there is a documented, mapped (GPS/UTM) and field verified occurrence of a critical habitat feature (e.g. den, lick, nest) for a Red-listed or Blue-listed species operations achieve 100% consistency with SP measures deemed necessary by a TSA licensee to prevent adverse harm.</li> <li>• Based on the potential level of impact to the TSA, participate in the consultation process led by the Ministry of Environment and the Ministry of Forests and Range, in the identification of Ungulate Winter Range and Wildlife Habitat Areas and the development of General Wildlife Measures.</li> </ul> <p>Reporting:</p> <p>a. Licensees report yes/no as to whether annual list obtained.</p> <p>b. Licensees report the number of cutblocks where there is a documented, mapped (GPS/UTM) and field verified occurrence of a critical habitat feature (e.g. den, lick, nest) for a Red-listed or Blue-listed species and the number of these cutblocks where 100% consistency with SP measures, deemed necessary to prevent adverse harm, were achieved. Reporting against the target is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.</p> <p>c. Licensees summarize applicable consultation processes they participated in.</p>	<p>a. (Y/N) _____</p> <p>b. Number of cutblocks where there was a documented critical habitat feature for a Red-listed or Blue-listed species _____</p> <p>Number of these cutblocks where 100% consistency with SP measures was achieved _____</p> <p>Summarize applicable consultation processes</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<b>7</b>	1.2.1, 1.2.2	<p>Target: Manage Mountain Caribou habitat so it is fully consistent with Government Action Regulation orders and/or higher level plan orders.</p> <p>Reporting: Licensees will report the area (ha) harvested that is consistent with Government Action Regulation orders and/or higher level plan orders against all of the area harvested within the designated Mountain Caribou recovery strategy area during the reporting year.</p>	<p>Number of hectares meeting Mountain Caribou strategy _____</p> <p>Area harvested within Mountain Caribou strategy area _____</p>

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> <small>(that target applies to)</small>	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>8</b>	1.2.2	<p>Target: Conserve or manage within the Kamloops TSA the following amounts of habitat for selected focal species (listed below) by retaining 100% of the amount of habitat (provided for in government's FPPR Section 7 notice) in a condition suitable for the survival of the species:</p> <p>Flammulated Owl – 3300 ha  Interior Western Screech Owl – 60 ha  Lewis's Woodpecker – 650 ha  Spotted Bat – 120 ha  Badger – 35 ha</p> <p>Reporting: Licensees will report on the number of ha of suitable habitat they have conserved or managed for each of the focal species. At the TSA level, hectares of Wildlife Habitat Areas will be reported by focal species</p>	<p>Habitat retained by species:</p> <p>Flammulated Owl _____  Interior Western Screech Owl _____  Lewis's Woodpecker _____  Spotted Bat _____  Badger _____</p>
<b>9</b>	1.2.3	<p>Target: 100% of trees planted will conform to plan commitments related to the species requirements within approved stocking standards (requires reforestation with commercially valuable and ecologically suitable tree species).</p> <p>Reporting: Licensees will report the number of hectares where trees were planted with species appropriate to the site as outlined in the stocking standards of their Forest Stewardship Plan. Additionally, licensees will report the total number of hectares where planting occurred.</p>	<p>number of hectares where trees were planted with species appropriate to the site _____</p> <p>total number of hectares where planting occurred _____</p>
<b>10</b>	1.2.4, 3.2.1	<p>Target: All planned road cut and fill slope seeding application carried out using certified seed and within 12 months of completed road construction on suitable sites</p> <p>Reporting: Licensees will report the use of certified seed and the average time for road cut and fill slope seeding application on areas of new road construction during the reporting year.</p>	<p>Average time for seeding application (months)  _____</p> <p>Seed applied that was certified (percent)  _____</p>

## Appendix 3 – SFM Plan Reporting Format

Tar #	Indicators (that target applies to)	Monitoring parameter	Monitoring results
11	1.3.1, 1.4.1	<p>Prioritized Red-listed ecological communities will be protected with retained existing forest.</p> <p>a. Where the ecological community is “documented, mapped (GPS/UTM) and field verified” for the cutting permit or TSL area where operations are being planned and:</p> <p style="margin-left: 40px;">I. the ecological community represents less than 10% of the cutting permit or TSL area, then the majority of the identified occurrence is protected.</p> <p style="margin-left: 40px;">II. the ecological community is greater than 10% of the gross area of either tenure noted above, then WTP placement will be weighted towards those communities.</p> <p>b. Where the ecological community is not well documented (i.e. ecological mapping at the site series level is not available), the prioritized list of Red-listed ecological communities is used as a support tool to weight WTP placement, or other reserves, to the applicable site series in the block</p> <p>Reporting:</p> <p>a. Licencees report the number of cutblocks where occurrence of ecosystems identified as “prioritized Red-listed ecological communities” was “documented”, and the number of these cutblocks where the Target was met.</p> <p>b. Licencees report the number of cutblocks where non-documented ecosystems identified as “prioritized Red-listed ecological communities” occurred, and the number of these cutblocks where the Target was met. A rationale is provided for each cutblock where the Target is not met.</p> <p><i>Reporting against the targets is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.</i></p>	<p>a.</p> <p>Number of cutblocks where documented Red-listed communities occurred _____</p> <p>Number of cutblocks where the substantial part of the identified occurrence was included in WTP(s) _____</p> <p>b.</p> <p>Number of cutblocks where non-documented ecosystems identified as “prioritized Red-listed ecological communities” occurred _____</p> <p>Number of these cutblocks where WTP placement, or other reserves, were weighted to the applicable site series _____</p> <p>Rationale if target not met _____            _____            _____            _____            _____</p>
12	1.4.1, 6.2.1	<p>Target: TSA Licencees will participate with First Nations to implement and improve upon the revised Archaeological Overview Assessment model and process.</p> <p>Reporting:</p> <p>Licencees will report on the number of cutblocks where an AOA was conducted.</p> <p>Licencees will report on the number of cutblocks where the AOA included a field visit</p>	<p>Number of cutblocks where an AOA was conducted. _____</p> <p>Number of cutblocks where the AOA included a field visit. _____</p>

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> (that target applies to)	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>13</b>	1.4.2	<p>Target:</p> <p>100 % protection of culturally important, sacred and spiritual sites that have been identified and mapped <b>or</b></p> <p>100% conformance to all plan commitments specifically designed to manage for culturally important, sacred and spiritual sites that have been identified and mapped.</p> <p>Reporting:</p> <p>a. Number of roads constructed or cutblocks harvested where culturally important, sacred or spiritual sites had been identified, mapped.</p> <p>b. Number of roads constructed or cutblocks harvested where the identified sites were managed or protected in accordance with forest plans.</p>	<p>Number of roads constructed or cutblocks harvested where culturally important, sacred or spiritual sites had been identified, mapped. _____</p> <p>Number of roads constructed or cutblocks harvested where the identified sites were managed or protected in accordance with forest plans. _____</p>
<b>14</b>	2.1.1	<p>Target: Regeneration established within three years or less on average from time of harvest.</p> <p>Reporting: Licencees will report the average time (weighted by area) for regeneration establishment on areas where regeneration delay was declared during the reporting period.</p>	<p>Average time for regeneration establishment<sup>27</sup> (months) _____</p>
<b>15</b>	2.2.1, 3.1.1, 4.1.1	<p>Target: Less than 6 percent, on average, of harvested areas will be in permanent roads and landings.</p> <p>Reporting: Licencees will report the area (ha) of permanent roads and landings identified in plans<sup>28</sup> over gross block area (ha) for cutblocks harvested during the reporting year, using information contained within Licencee plans.</p>	<p>Number of hectares of roads and landings within harvested areas _____</p> <p>Gross block area (ha) _____</p>

<sup>27</sup> For natural regeneration, average age of trees from the first survey and for artificial regeneration, date of initial planting.

<sup>28</sup> Using best information available (plan estimate or field measure)

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> <small>(that target applies to)</small>	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>16</b>	2.2.2, 5.1.1, 5.2.1, 5.2.3	<p>Target: Harvest the annual cut allocation for the year consistent with the Cut Control Regulation and Policy.</p> <p>Reporting: Licencees will report the harvest level allocated for each licence and harvest level cut (cut control volume) for the past reporting year.</p>	<p>Allocated harvest level _____</p> <p>Cut control volume _____</p> <p>Actual harvest all grades _____</p>
<b>17</b>	2.2.3	<p>Target: 100 percent conformance to riparian and lakeshore commitments made within plans</p> <p>Reporting: Licencees will report the number of riparian and lakeshore related non conformances to plans occurring during the reporting year as compared to the gross area of cutblocks that were harvested that had riparian management areas within or adjacent to them.</p>	<p>Number of riparian and lakeshore non conformances to plans _____</p> <p>Gross area of cutblocks harvested having RMAs within/adjacent: _____</p> <p>PAG request: Describe any non-conformances _____ _____</p> <p>If there is an unusual aspect to an incident/non-conformance provide information to help other licencees.</p>
<b>18</b>	3.1.1	<p>Target: 100 percent conformance to soil conservation measures contained within plans.</p> <p>Reporting: Licencees will report the area (hectares) where soil disturbance commitments were achieved as compared to the total net area of cutblocks that were harvested during the reporting year</p>	<p>Number of hectares where soil disturbance commitments were achieved: _____</p> <p>Total net area of cutblocks harvested during the reporting year (ha): _____</p>

## Appendix 3 – SFM Plan Reporting Format

Tar #	Indicators (that target applies to)	Monitoring parameter	Monitoring results
<b>19</b>	3.1.2	<p>Target: Coarse woody debris shall be left on each block:</p> <p>a. a minimum of 5 m<sup>3</sup>/ha dispersed on blocks with very dry BEC variants, denoted with an “x” descriptor for moisture</p> <p>b. a minimum of 20 m<sup>3</sup>/ha dispersed on all other blocks</p> <p><i>Reporting will use supplemental information collected as part of post harvest waste assessments and may include ocular estimates.</i></p> <p><i>Reporting against the target is limited to blocks harvested during the reporting year that had the original SP signed after January 1st, 2007.</i></p>	<p>Number of cutblocks where CWD target met _____</p> <p>Number of cutblocks harvested _____</p>
<b>20</b>	3.2.1	<p>Target: Equivalent clear cut area (ECA) not to exceed 35% without doing further hydrological assessments prior to harvesting.</p> <p>Reporting: Licensees will report the number of cutblocks harvested where the watershed ECA exceeded 35% and no further hydrological assessments were completed compared to the total number of cutblocks harvested where the watershed ECA exceeded 35%.</p> <p>Licensees will report which high risk watershed(s) the cutblocks with ECA's exceeding 35% (and no further assessments completed) were within.</p> <p><i>Target applies to the highest risk rated watersheds (post MPB) as identified in Appendix 7.</i></p>	<p>the number of cutblocks harvested where the watershed ECA exceeded 35% and no further hydrological assessments were completed _____</p> <p>total number of cutblocks harvested where the watershed ECA exceeded 35%. _____</p> <p>Report watersheds where ECA &gt;35% and no further assessments _____ _____</p>
<b>21</b>	5.1.1, 6.3.1	<p>Target: Where forest operations are planned within range units, the forest licensee will communicate with the rancher in advance of those operations to minimize impacts to affected ranchers.</p> <p>Reporting: Licensees will report percent of ranchers affected by planned operations that were communicated with during the reporting period.</p>	<p>Number of affected ranchers communicated with during reporting period _____</p> <p>PAG request: What are the issues, common ground, etc with rancher communication? _____ _____</p>

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> <small>(that target applies to)</small>	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>22</b>	5.1.1, 6.3.1	<p>Target: Communication of forest operations to occur with trappers 100% of the time in advance of operations (see annual reporting requirements on how this indicator is applied).</p> <p>Reporting: Where trappers holding a registered trapline advise forest licensees of the areas that they will be active in a given year and seek to understand what forest operations might be occurring for that year, licensees will report if they communicated with that trapper their planned forest operations.</p> <p>Should a forest licensees plans change during that year such that operations will be conducted in areas not originally discussed (excluding areas discussed in general and identified as not being of concern to the trapper regardless of any operations taking place), companies will report if they made a concerted effort to contact that trapper and inform them of those operations.</p>	<p>Number of trappers desiring communication _____</p> <p>Number of trappers communicated with during reporting period _____</p> <p>Number of instances where plans changed possibly impacting trapper(s). _____</p> <p>Number of those instances where trappers where effort made to discuss changes with trapper(s). _____</p>



## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> <small>(that target applies to)</small>	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>23</b>	5.1.1 (parts a,b), 6.1.1 (parts a,b), 6.1.2 (parts a,b), 6.1.3 (all), 6.2.1 (all), 6.4.3 (part a).	<p>Target: First Nation communications</p> <p>a. Open communications (track meetings and other meaningful communication) with local First Nations during Operational Plan reviews will include an understanding of traditional territories and other aboriginal rights including cultural and spiritual values.</p> <p>b. TSA Licencees respond to all written requests for communication from First Nations.</p> <p>c. Incorporation of traditional knowledge, non-timber resources, and cultural and spiritual values in forest planning, where they have been identified, mapped and shared by willing aboriginal communities</p> <p>Reporting: Licencees will report</p> <p>a. Number of meetings and meaningful communications with First Nations that included management and protection of traditional knowledge, non-timber resources, and cultural and spiritual values.</p> <p>b. Number of written requests for communication from First Nations versus the number of responses made to First Nations. Reporting is on a one to one ratio (one response for each request).</p> <p>c. Number of cutblocks where traditional knowledge, non-timber resources, and cultural and spiritual values were identified, mapped and shared by willing aboriginal communities. And of those cutblocks, the number where specific actions were taken to manage for and/or protect that knowledge, resources, or values.</p>	<p>Number of meetings and meaningful communications _____</p> <p>Number of written requests for communication _____</p> <p>Number of responses made _____</p> <p>Number of cutblocks where specific actions were requested ___ taken ____</p> <p>PAG request: What are the issues, common ground, etc with First Nations communication?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> <small>(that target applies to)</small>	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>24</b>	5.1.1, 6.4.2, 6.5.2 (part b)	<p>Target: Public communications</p> <p>a. TSA Licensees will demonstrate efforts by participating in public multi-stakeholder meetings at both the strategic KLRMP level (interests represented at every meeting) and at the local level (participation in a minimum of 60% of Local Resource Use Plan meetings). Licensees will also report on the number of community meetings held or attended.</p> <p>b. TSA Licencees respond to all written requests from the public for communication within 30 days of their receipt.</p> <p>Reporting: Licencees will report:</p> <p>c. A yes/no answer as to whether their interests were represented at KLRMP meetings, the number of LRUP meetings attended against the number held within their operating area. They will also report the number of community meetings held or attended during the reporting period.</p> <p>d. Number of responses sent out by licencees compared to the number of written requests for communication. Report the average timeline for response.</p>	<p>Interests represented at LRMP? Yes ____ No ____</p> <p>Number of LRUP meetings attended _____</p> <p>Number of LRUP meetings held _____</p> <p>Number of community meetings attended _____</p> <p>Number of responses from Licencee _____</p> <p>Number of written requests from public _____</p> <p>Average response time (in days) _____</p> <p>Examples of significant information communicated or significant issues/topics</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<b>25</b>	5.1.1, 6.3.1	<p>Target: 100% conformance to strategies in plans designed to achieve preservation, and partial retention visual quality objectives.</p> <p>Reporting: Licencees will report on the number of harvested blocks that achieve the visual intent as described in plans versus the number of blocks harvested within the past year that had preservation, retention or partial retention visual quality objectives.</p>	<p>Number of blocks with preservation, retention or partial retention achieving visual intent _____</p> <p>Number of blocks harvested with VQO's: _____</p>

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> <small>(that target applies to)</small>	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>26</b>	5.2.2	<p>Target: Safety training</p> <p>a. 90% of DFA forest contractors will have both environmental and safety training. For BCTS, report on the number of licences and contracts awarded that required SAFE certification or an equivalent safety certification/registration.</p> <p>b. 90% of woodlands employees are trained in accordance with training plans.</p> <p>Reporting:</p> <p>a. Licensees will report the total number of forest contractors and identify the number that had received both environmental and safety training.</p> <p>b. Licensees will report the total number of forestland employees (staff) and identify the number that had received training in accordance with their training plan.</p>	<p>Total contractors _____</p> <p>Trained contractors _____</p> <p>BCTS contracts and licenses awarded _____</p> <p>BCTS number SAFE Company registered and/or certified _____</p> <p>Total forestlands employees _____</p> <p>Trained forestland employees _____</p>

## Appendix 3 – SFM Plan Reporting Format

Tar #	Indicators (that target applies to)	Monitoring parameter	Monitoring results
27	5.2.3	<p>Target: Number of direct woodlands employees on payroll (track using full time equivalent person years to account for seasonal employees).</p> <p>Reporting: Licencees will report woodland employees on payroll (using FTE's).</p>	Number of employees (in FTE's) _____
28	5.2.4, 6.4.3	<p>Target: Maintain and/or increase the number of working relationships (partnerships, joint ventures, cooperative agreements, memorandum of understanding, or business contracts) with First Nations.</p> <p>Reporting: Licencees will report on the number of working relationships with applicable First Nations (partnerships, joint ventures, co-operative agreements, memorandums of understanding, or business contracts over \$5,000 or over 500 cubic meters in volume) during the reporting year.</p> <p>Performance is based on a <b>three year rolling average</b>. 2006 performance target is achieved if the 04/05/06 average is <math>\geq</math> to the 03/04/05 average.</p> <p><i>Examples of a business contract include a work agreement or a direct timber sale with a First Nation Band or First Nation Contractor<sup>29</sup>. For consistency in reporting, count multiple work agreements with one band or contractor or direct sales with one band or contractor as a single business contract. For example, multiple work agreements or multiple direct sales would count as a single business contract if they occurred with the same band or contractor. Licencees will report this figure as a rolling three year average. For annual reporting, the information for the current year will be combined with the previous two years reporting, then averaged for the three years. Examples of working relationships will be provided to indicate possible trends in the types of these relationships.</i></p>	<p>Number of working relationships _____</p> <p>Examples of relationships:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
29	5.2.4, 6.4.3, 6.5.2	<p>Target: At least 10% of the TSA's AAC is allocated to First Nation ventures.</p> <p>Reporting: Licensees report total AAC of any tenure issued under Section 12 of the Forest Act (forms of agreement) where First Nations are the license holder.</p>	AAC allocated to First Nations _____

<sup>29</sup> First Nation Contractor is a company where one or more of the principles are of First Nations decent.

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> (that target applies to)	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>30</b>	6.3.1	<p>Target: Support local communities by maintaining active involvement with local (within Kamloops TSA) log/lumber value-added and business initiatives/partnerships.</p> <p>Reporting: Licensees (except BCTS) will report:</p> <ul style="list-style-type: none"> <li>• total volume of logs sold within the TSA</li> <li>• log-volume equivalent (m3) of any lumber sales within the Kamloops TSA (using the appropriate conversion/recovery factor)</li> <li>• number of parties logs/lumber sold to</li> </ul> <p>BCTS will report:</p> <p>number of value-added scale-sites and related volumes within the TSA receiving logs from sales within the TSA</p>	<p>volume of logs sold within the TSA _____</p> <p>log-volume equivalent (m3) of lumber sales _____</p> <p>number of parties logs/lumber sold to _____</p> <p>BCTS:</p> <p>number of value-added scale-sites _____</p> <p>related volumes _____</p>
<b>31</b>	6.3.2	<p>Target: <b>31.</b> A minimum of 80% of contractors conducting on the ground work that are SAFE Company or equivalent registered and/or certified. And for BCTS, that a minimum of 80% of licences or contracts awarded were SAFE Company or equivalent registered and/or certified.</p> <p>Reporting: Number of on the ground contractors in total working in the Kamloops TSA and the number of those that are SAFE Company registered and/or certified. For BCTS, report the number of licences and contracts awarded that required Safe Company or equivalent certification as well as the total licences/contracts awarded.</p>	<p>Total number of on the ground contractors _____</p> <p>number SAFE Company registered and/or certified _____</p> <p>BCTS contracts and licenses awarded _____</p> <p>BCTS number SAFE Company registered and/or certified _____</p>
<b>32</b>	6.3.3	<p>Target: All forest companies/organizations subscribing to the SFM Plan are SAFE Company or equivalent registered and/or certified.</p> <p>Reporting: Licencees will report a yes/no answer as to whether they are SAFE Company or equivalent registered and/or certified.</p>	<p>Is company/organization SAFE Company or equivalent registered and/or certified?</p> <p>Yes _____ No _____</p>

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> <small>(that target applies to)</small>	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>33</b>	6.4.1	<p>Target: Active, engaged public advisory group</p> <p>a. .80% of survey responses “3” or better</p> <p>b. All written comments are reviewed and considered, and all line responses averaging less than 3 become action items</p> <p>Reporting:</p> <p>a. Survey responses coded 1 (poor), 2, 3 (satisfactory), 4, 5 (well done)</p> <p>b. Results of feedback form compiled and reported as part of annual monitoring program.</p>	<p>Response average _____</p> <p>Results of feedback form reviewed and considered            ____ yes ____ no</p>
<b>34</b>	6.5.1	<p>Target: The TSA Licencees will maintain educational support that leads to a balanced and broad-based understanding of forestry. One focus is forestry programs at the elementary, secondary and post-secondary levels. Target 40 actions per year (visits, field trips, information provision, etc).</p> <p>Reporting: Licencees will report on the number of presentations or field trips to schools, public groups and individuals during the reporting year.</p>	<p>Number of presentations or field visits in current year            _____</p> <p>Examples of significant information communicated or significant issues/topics:            _____            _____            _____</p> <p>Examples of groups involved:            _____            _____            _____</p>

## **Appendix 3 – SFM Plan Reporting Format**

<b>Tar #</b>	<b>Indicators</b> <small>(that target applies to)</small>	<b>Monitoring parameter</b>	<b>Monitoring results</b>
<b>35</b>	6.5.2	<p>Target: Licencees will keep members of the public informed of TSA strategies being developed, and planning occurring by:</p> <ul style="list-style-type: none"> <li>• Maintaining a website</li> <li>• Circulating SFM Plan and other information to the public at least annually (news release/leaflet/open house/Local Resource Use Plan etc.)</li> </ul> <p>Reporting: Licensees will report on the number of ha of suitable habitat they have conserved or managed for each of the focal species. At the TSA level, hectares of Wildlife Habitat Areas will be reported by focal species</p>	<p>Web site is being maintained? Yes ___ No___</p> <p>SFM Plan and other information was made publicly available in the last year? Yes ___ No ___</p> <p>Number of times website was accessed ___</p>
<b>36</b>	6.5.2	<p>Target: research and extension</p> <ol style="list-style-type: none"> <li>a. TSA licencees will participate in research and extension activities.</li> <li>b. Identify priorities for reinvestment in the forest sector through the TSA committee annual review and support of research programs and strategies.</li> </ol> <p>Reporting:</p> <ol style="list-style-type: none"> <li>a. Licencees will report a yes/no answer with respect to their direct or indirect representation on the Forest Research Extension Partnership.</li> <li>b. Licencees will report a yes/no answer as to whether their TSA wide research results were shared with members of the public advisory group. Licencees will provide an indication of the type of research that is being undertaken and the value and applicability of this research to sustainable forest management.</li> </ol>	<p>Licensee representation? Yes _____ No _____</p> <p>Research results shared? Yes _____ No _____</p> <p>Type of research and value and applicability to SFM:            _____            _____            _____            _____            _____</p>

# **Appendix 4**

## **2006 - 2011 FOREST STEWARDSHIP PLAN SUMMARY**



## **Appendix 4: 2006-2011 FOREST STEWARDSHIP PLAN SUMMARY**

Canfor Vavenbys' Forest Stewardship Plan (FSP) was approved on December 6, 2007. The FSP covers all operations in Vavenbys' DFA.. The FSP identifies the location of Forest Development Units (FDUs) for a 5 year period (2007 – 2012). The DFA is divided in to 4 FDUs which include the entire TFL as one unit and the FL divided in to north and south units and an additional unit that covers operations in the Kamloops Forest district in other licensees traditional operating areas that addresses salvage of mountain pine beetle attacked stands.

FDUs identify the location where primary forestry activities occur that include harvesting, road building and silviculture activities over the 5 year term of the FSP.

The plan specifies results, strategies and objectives for each FDU as they relate to primary forest activities that are consistent with:

- \* Objectives set by government under the Forest Practices Code (FPC), Forest & Range Practices Act (FRPA) and the Forest Plans & Practices Regulation.

Results and strategies address the management of numerous resource values in the DFA including, but not limited to water, riparian, fisheries, soils, ecosystem management, biodiversity, range, wildlife, recreation, visual resource, cultural heritage as well as identified special resource management zones.

The FSP identifies measures to prevent the introduction or spread of noxious weeds and mitigating the loss of natural range barriers. Stocking standards, regeneration date and free growing height are also identified to ensure harvested areas are reforested to an acceptable standard.

An amendment to the FSP may be considered at any time to address any changes required to address new or changing legislation, changes in higher level plans and where existing plans are not adequately addressing resource objectives. When amendments to the plan are required, they will follow legislated requirements for content, review and comment.

# **Appendix 5**

## **TFL 18 MANAGEMENT PLAN #10**

### **SUMMARY**

## **Appendix 5: TFL 18 MANAGEMENT PLAN #10 SUMMARY**

Management Plan #10 was approved on July 1, 2006 and is in effect for a five year period ending on June 30, 2011. The Management Plan covers the TFL 18 portion of the DFA. The Management Plan outlines the strategies that Canfor – Vavenby will follow in Forest Management Planning or Forest Stewardship Planning for the defined timeframe (2006-2011) after which time the Management Plan will be replaced with Management Plan #11 as approved by the Chief Forester.

The management planning process includes a timber supply analysis and information package, a twenty year plan and the management plan text.

The information package documents the procedures, assumptions, data and model to be used in the timber supply analysis. The assumptions used in the information package are used to guide the development of the timber supply analysis.

The timber supply analysis examines the availability of wood volume for harvesting over a defined period of time. The analysis provides the Chief Forester with information regarding short and long term timber supply. The analysis involves the testing and reporting of a variety of assumptions and management strategies based on resource inventories of the TFL. The purpose of the timber supply analysis is to provide the chief forester with sufficient information to make an informed Annual Allowable cut determination for the term of the Management Plan.

The 20 Year Plan supports the timber supply analysis by spatially confirming a hypothetical sequence of harvest over a 20 year period. The 20 year plan spatially identifies the timber harvesting landbase, existing and proposed harvest areas, existing and proposed road access, special resource management constraints, type and quality of timber and suitable harvest methods.

The management plan text proposes management objectives and, as necessary, strategies for achieving objectives for all forest resources on Crown and private land within the TFL, and provides an opportunity for other agencies, the public and other interested parties to review and comment on the proposed objectives and strategies. It also includes details regarding the status of various resource inventories

The management plan provides guidance for other planning processes including the Forest Stewardship Plan.