

**PRINCE GEORGE DEFINED FOREST AREA  
SUSTAINABLE FOREST MANAGEMENT PLAN**



**August 2014**



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# TABLE OF CONTENTS

<b>SIGNATORIES</b> .....	<b>V</b>
<b>COMMITMENTS TO SUSTAINABLE FOREST MANAGEMENT</b> .....	<b>VII</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>XII</b>
<b>1.0 INTRODUCTION &amp; OVERVIEW</b> .....	<b>1</b>
<b>2.0 THE DEFINED FOREST AREA</b> .....	<b>2</b>
2.1 AREA DESCRIPTION.....	2
2.1.1 <i>Overview</i> .....	2
2.1.2 <i>Communities</i> .....	3
2.1.3 <i>Area Economy</i> .....	4
2.1.4 <i>Environment</i> .....	4
2.1.5 <i>Species at Risk</i> .....	5
2.1.6 <i>Forest Use</i> .....	6
2.1.7 <i>Forest Land Base</i> .....	6
<b>TABLE 1: AREA SUMMARY FOR CANFOR DFA</b> .....	<b>7</b>
2.2 MOUNTAIN PINE BEETLE.....	9
2.2.1 <i>Overview</i> .....	9
2.2.2 <i>Area Affected</i> .....	9
2.2.3 <i>Strategy &amp; Response</i> .....	9
2.2.4 <i>The Extent of Current &amp; Future Infestations</i> .....	10
2.2.5 <i>Summary of the Chief Forester’s AAC Determination for the Prince George TSA</i> .....	10
2.2.6 <i>Factors Influencing the Severity of Attack</i> .....	10
2.2.7 <i>Environmental Impacts of the Beetle Infestation</i> .....	11
2.2.8 <i>Outlook</i> .....	11
2.3 OTHER MAJOR FACTORS AT PLAY IN THE DFA.....	13
2.4 LICENSEE OPERATING AREAS.....	13
<b>3.0 THE PLANNING PROCESS</b> .....	<b>15</b>
3.1 THE CSA CERTIFICATION PROCESS.....	15
3.1.1 <i>Public/Aboriginal Involvement: Performance Requirements &amp; Indicators</i> .....	15
3.1.2 <i>Public Review of Annual Reports &amp; Third Party Audits</i> .....	16
3.1.3 <i>Internal Infrastructure: Systems Components</i> .....	16
3.1.4 <i>CSA Registration</i> .....	17
3.2 THE PRINCE GEORGE SFM PLANNING PROCESS.....	18
3.2.1 <i>Licensee Participation</i> .....	18
3.2.2 <i>Public Participation</i> .....	18
<b>4.0 STRATEGY GUIDING THE SFMP</b> .....	<b>20</b>
4.1 SFMP STRATEGY FOR THE DFA.....	20
4.2 ADDITIONAL GUIDANCE.....	20
<b>5.0 INDICATORS &amp; INDICATOR MATRICES</b> .....	<b>21</b>

5.1	OBJECTIVES, INDICATORS & TARGETS .....	21
5.2	BASE LINE FOR INDICATORS .....	21
5.3	CURRENT STATUS OF INDICATORS.....	21
5.4	FORECASTING .....	22
5.5	REGIONAL FORECASTING RELATED TO THE SFMP .....	22
5.6	LEGAL REQUIREMENTS .....	23
5.7	INDICATORS IN THE SFMP.....	24
5.7.1	1.1.1 Ecosystem area by type .....	24
5.7.2	1.1.2 Forest area by type or species composition .....	27
5.7.3	1.1.3 Forest area by seral stage or age class and 4.1.1 Net Carbon uptake .....	29
5.7.4	1.1.3 Forest area by seral stage or age class.....	36
5.7.5	1.1.4 Degree of within-stand structural retention.....	41
5.7.6	1.2.1 Degree of habitat protection for selected focal species, including species at risk.	
	1.2.2. Degree of suitable habitat in the long term for selected focal species, including species at risk	43
5.7.7	1.2.3 Proportion of regeneration comprised of native species. ....	45
	1.3.1 Genetic diversity .....	45
5.7.8	1.4.1 Proportion of identified sites with implemented management strategies.....	47
5.7.9	1.4.2 Protection of identified sacred and culturally important sites;.....	49
	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 .....	49
5.7.10	2.1.1 (a) Reforestation success.....	51
5.7.11	2.1.1 (b) Reforestation success.....	53
5.7.12	2.2.1 Additions and deletions to the forest area.....	56
5.7.13	2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested	59
5.7.14	3.1.1. Level of soil disturbance .....	62
5.7.15	3.1.2 Level of downed woody debris.....	64
5.7.16	3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance.....	66
5.7.17	4.1.1 Net Carbon uptake.....	69
5.7.18	5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA.....	73
5.7.19	5.2.1 Level of investment in initiatives that contribute to community sustainability.....	75
5.7.20	5.2.1 Level of investment in initiatives that contribute to community sustainability.....	77
5.7.21	5.2.2 Level of investment in training and skills development.....	78
	5.2.3 Level of direct and indirect employment .....	79
5.7.22	5.2.4 Level of Aboriginal participation in the forest economy.....	81
5.7.23	6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights .....	83
5.7.24	6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans. ....	85
	6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities .....	85
5.7.25	6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur.....	88
5.7.26	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 ....	91

5.7.27	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.....	93
	6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved	93
5.7.28	6.4.1 Level of participant satisfaction with the public participation process .....	95
5.7.29	6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general	97
5.7.30	6.5.1 Number of people reached through educational outreach.....	100
5.7.31	6.5.2 Availability of summary information on issues of concern to the public .....	102
<b>6.0</b>	<b>LINKS TO OTHER PLANNING PROCESSES .....</b>	<b>103</b>
6.1	STRATEGIC PLANS.....	103
6.2	PLANS, POLICIES AND STRATEGIES THAT RELATE TO THE SFM PLAN .....	103
	<b>LIST OF ACRONYMS .....</b>	<b>105</b>
	<b>GLOSSARY.....</b>	<b>107</b>
	<b>APPENDIX 1 – LIST OF REFERENCES.....</b>	<b>119</b>
	<b>APPENDIX 2 – SUMMARY OF PUBLICLY DEVELOPED VALUES, OBJECTIVES AND INDICATORS .....</b>	<b>121</b>
	<b>APPENDIX 3 – SPECIES OF MANAGEMENT CONCERN.....</b>	<b>134</b>
	<b>APPENDIX 4 – NON-REPLACEABLE FOREST LICENSE (NRFL) RISK ASSESSMENT .....</b>	<b>138</b>
	<b>APPENDIX 5 –RISK RANKING – POTENTIAL IMPACT OF OTHER LICENSEES ON ACHIEVEMENT OF SFM TARGETS.....</b>	<b>142</b>
	<b>APPENDIX 6 –FORECASTS FOR OLD FOREST (INDICATORS 1.1.3 AND 4.1.1) .....</b>	<b>148</b>
	<b>APPENDIX 7 –FORECASTS FOR YOUNG PATCH SIZE DISTRIBUTION (INDICATOR 1.1.3B).....</b>	<b>152</b>

## **LIST OF TABLES**

Table 1: Area Summary for Canfor DFA .....	7
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## **LIST OF FIGURES**

<i>Figure 1: Map of the Prince George SFM Plan Defined Forest Area. ....</i>	<i>2</i>
<i>Figure 2: Estimated Observed and Projected Annual Red-Attack in the Prince George Forest District (Old and Current -2011).....</i>	<i>12</i>
<i>Figure 3: Current Estimate of Observed and Projected Cumulative Attack in the Prince George Forest District (2011).....</i>	<i>12</i>

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## SIGNATORIES

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Canfor is committed to implementing and maintaining, on a continuous improvement basis, the Prince George Sustainable Forest Management Plan.



Sara Cotter, R.P.F. Planning Team  
Canadian Forest Products Ltd. Forest Management Group

August 27, 2014

Date

PC Baird

Peter Baird, R.P.F. Planning Manager  
Canadian Forest Products Ltd. Forest Management Group

Aug 27/14

Date

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## COMMITMENTS TO SUSTAINABLE FOREST MANAGEMENT

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*Canadian Forest Products Ltd. (Canfor) believes in conducting its business in a manner that protects the environment and ensures sustainable forest development. The following Environmental Policy and SFM Commitments will detail the commitments to Sustainable Forest Management (SFM) for the Prince George Defined Forest Area (DFA). These commitments are available and communicated publicly.*



### ENVIRONMENT POLICY

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We are committed to responsible stewardship of the environment throughout our operations.

**We will:**

- Comply with or exceed legal requirements.
- Comply with other environmental requirements to which the company is committed.
- Achieve and maintain sustainable forest management.
- Set and review objectives and targets to prevent pollution and to continually improve our sustainable forest management and environmental performance.
- Provide opportunities for interested parties to have input into our sustainable forest management planning activities.
- Promote environmental awareness throughout our operations.
- Conduct regular audits of our forest and environmental management systems.
- Communicate our sustainable forest management and environmental performance to
- our Board of Directors, shareholders, employees, customers and other interested parties.

A handwritten signature in black ink, appearing to read 'Don Kayne'.

Don Kayne  
President and Chief Executive Officer

A handwritten signature in black ink, appearing to read 'R. L. Cliff'.

Ronald L. Cliff  
Chairman

May 2011





**Canadian Forest Products**

*Sustainable Forest Management Commitments - May 2012*



**Sustainable Forest Management**

We will manage forests to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social and cultural opportunities for the benefit of current and future generations. In the management of forests we will honour relevant international agreements and conventions to which Canada is a signatory.

**Accountability**

We will be accountable to the public for managing forests to achieve current and future values. One way we will demonstrate this is by certifying our forestry operations to internationally recognized, third-party verified sustainable forest management certification standards.

**Adaptive Management**

We will use adaptive management to continually improve sustainable forest management by identifying values, setting objectives and targets for the objectives, and monitoring results. We will modify management practices as necessary to achieve the desired results.

**Science**

We will utilize science to improve our knowledge of forests and sustainable forest management and will monitor and incorporate advances in sustainable forest management science and technology where applicable.

**Multiple Value Management**

We will manage forests for a multitude of values, including biodiversity, timber, water, soil, wildlife, fish/riparian, visual quality, recreation, resource features and cultural heritage resources.

**Health and Safety**

We will conduct our operations in a manner which will provide a safe environment for employees, contractors, and others who use roads and forest areas we manage.

**Aboriginal Peoples**

We recognize and will respect Aboriginal rights, title and treaty rights when planning and undertaking forest management activities.

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**Opportunities for Participation**

We will provide opportunities for the public, communities, other stakeholders and Aboriginal Peoples with rights and interests in sustainable forest management to participate in the development and monitoring of our Sustainable Forest Management Plans.

**Scale**

We will define objectives over a variety of time intervals (temporal scales) and at spatial scales of stand, landscape and forest. This produces ecological diversity and allows for the management of a range of conditions, from early successional to old growth.

**Timber Resource**

We will advocate for a continuous supply of affordable timber from legal sources in order to carry out our business of harvesting, manufacturing and marketing forest products for the sustained economic benefit of our employees, the public, communities and shareholders, today and for future generations.

**Forest Land Base**

We will advocate for the maintenance of the forest land base as an asset for current and future generations.

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Don Kayne

A handwritten signature in black ink, appearing to read "DKayne", is positioned below the name "Don Kayne".

President and Chief Executive Officer

May 2012

Acknowledgements

The development of this Sustainable Forest Management Plan could not happen without the dedicated efforts and hard work of the people and organizations listed below:

**Members of the Prince George Public Advisory Group**

<b>Representative</b>	<b>Sector</b>
Betty Abbs	Local Government
Chris Andreschefski	Private Landowners
Lyle Lambert	Métis
Norm Holt	Private Landowners
Shannon Carson	Public Interest
Mark Clark	Small Timber Tenures
Mike Torpe	Small Timber Tenures
George Desjarlais	West Moberly First Nation
Jo Graber	Cultural Conservation
Ray Hourie	Métis
Melanie Karjala	Research & Education
Virginia Karr	Natural Conservation
David Kim	Forest Workers & Contractors
David King	Recreation, Non-Motorized
Sandra Kinsey	Naturalists
Anne Migvar	Ranching & Farming
Jeff Mohr	Recreation, Non-Commercial, Motorized
Esther Perry	Ranching & Farming
Ken Pickering	Commercial Wildlife Interests (Guides, Trappers, Outfitters)
Patience Rakochy	Non-Timber Forest Products
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Ian Wilson	Hunting and Fishing
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**Facilitator & Support**

Alan Wiensczyk, R.P.F. Trout Creek Collaborative Solutions

Tanya Milner, Scribing Services

## EXECUTIVE SUMMARY

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Between 2004 and 2006 forest tenure holders ("licensees") operating in the Prince George Defined Forest Area (DFA) worked with a group of public and Aboriginal representatives (the SFM Public Advisory Group) to develop a Sustainable Forest Management Plan (SFMP)<sup>1</sup>. Earlier, in 2000, a similar Public Advisory Group worked with Canadian Forest Products Ltd. (Canfor) to develop a SFMP for Canfor's Tree Farm License 30 (TFL30).

Members of the SFM Public Advisory Groups (PAG) for both the DFA and TFL30 represented a cross-section of local interests including recreation, tourism, ranching, forestry, conservation, water, community and Aboriginals.

In the fall of 2010, the licensees on the DFA and TFL30 agreed to merge the two SFM Plans into one document and one Defined Forest Area as part of the transition to the Canadian Standards Association (CSA) Sustainable Forest Management (CSA Z809-08) standard.

The SFMP includes a set of values, objectives, indicators and targets that address environmental, economic and social aspects of forest management in the Prince George Defined Forest Area. The plan is based on the CSA Sustainable Forest Management; Requirements and Guidance, which is one of the primary certification systems currently being used in British Columbia. An SFMP developed according to the CSA standard sets performance objectives and targets over a defined forest area (DFA) 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. Changes to this plan reflect the 2008 (CSA Z809-08) standard requirements and the public meetings held to implement these changes.

Irrespective of changes occurring to the CSA SFM standard, the SFMP is an evolving document that is reviewed and revised on an annual basis with the PAG to address changes in forest conditions and local community values. Canfor is committed to the achievement of the SFMP. Each year the PAG reviews an annual report prepared by Canfor to assess achievement of performance measures. This monitoring process provides Canfor, the public, and Aboriginals 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 SFMP.

Following completion of the SFMP 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 Canfor certification website contains the latest information on the Prince George DFA process, including the SFM Plan, and can be viewed at:

<http://www.canfor.com/responsibility/environmental/>

or

<http://www.sfmptsa.com/>

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<sup>1</sup> This SFMP was developed using the Kamloops – Thompson SFMP (January 2010) as a template for structure and generic content.

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## 1.0 INTRODUCTION & OVERVIEW

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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 Plan (SFMP) developed according to the CSA standard, sets performance objectives and targets over a defined forest area (DFA) to reflect local and regional interests. This standard requires that SFMP development, maintenance and improvement include significant public involvement. Public Advisory Groups (PAGs) composed of a cross-section of local interests, including recreation, tourism, ranching, forestry, conservation, water, community and Aboriginals, fulfill this role.

Working with the PAG, Canfor<sup>2</sup> developed and is maintaining and continuously improving the Prince George DFA SFMP, which is based on the CSA Z809-08 standard.<sup>3</sup> The plan was written with the opportunity to provide management direction to licenced forest land within the Prince George Forest District and TFL 30 managed by Canfor.

The forest licensee has been working with the public to develop responsible forest management plans for many years. Many planning processes, including those for Forest Stewardship Plans, provide for public and Aboriginal review and comment. Licensees prepare Forest Stewardship Plans that consider the direction provided. Licensee standards and operating plans are continuously updated as new information comes forward. The SFMP is an example of the commitment of the licensee to adapt their management practices in response to changes in society's values.

The SFMP serves as a “roadmap” to current and long-term management in the DFA, setting performance targets and management strategies that are reflective of the ecological and social values of the DFA. The plan is consistent with strategic plans such as the Prince George Land and Resource Management Plan (PG LRMP).

It is the intent that the values, objectives, indicators, targets and guiding principles described in this plan will continue to be adhered to by Canfor in the DFA, supporting sustainable forest management in the DFA. The SFMP is continuously evolving. It is reviewed and revised periodically to reflect changes in forest condition and local community values.

More information about the DFA certification process, Sustainable Forest Management Planning, meeting summaries, annual reporting and maps can be obtained at the following websites:

<http://www.canfor.com/responsibility/environmental/certification>

or

<http://www.sfmptsa.com/>.

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<sup>2</sup> Referred to as ‘licensee’ throughout this document. Refer to Sec 4.2.1 for a more complete description.

<sup>3</sup> <http://www.shopcsa.ca/onlinestore/GetCatalogItemDetails.asp?mat=2419617>

## 2.0 THE DEFINED FOREST AREA

### 2.1 Area Description<sup>4</sup>

#### 2.1.1 Overview

The PG TSA is located in the north-central interior of BC, covers approximately 7.5 million hectares and is subdivided into three forest districts; 1) Fort St. James; 2) Vanderhoof; and 3) Prince George.

The Prince George Forest District has a gross area of approximately 3,577,209 hectares of which 2,044,295 hectares (57%) is considered forested.

The Prince George DFA (Figure 1) is the Crown Forest land base contained within the Prince George Forest District and TFL 30 and the traditional operating areas of the signatory licensee. The DFA area is 1,499,505 hectares.

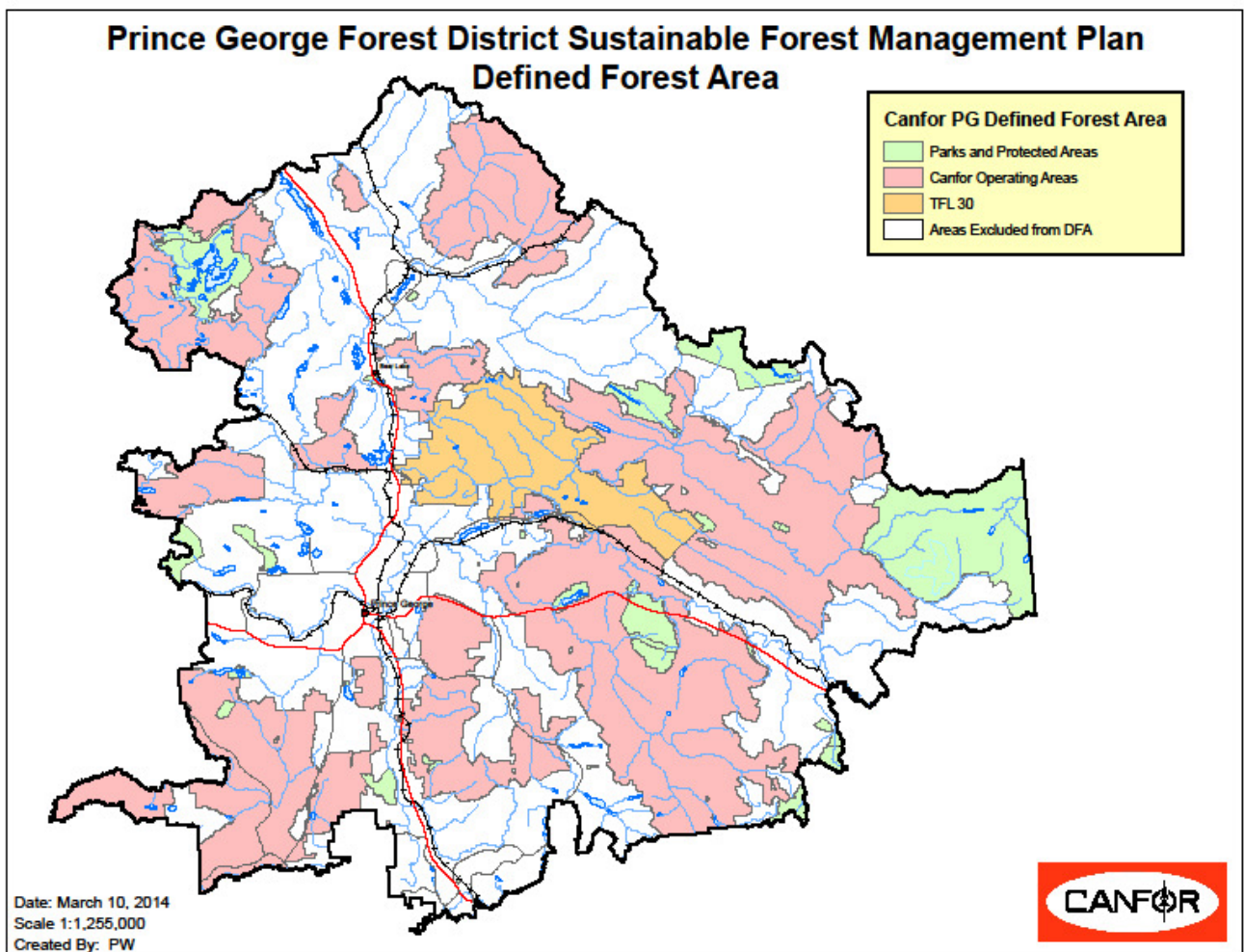


Figure 1: Map of the Prince George SFM Plan Defined Forest Area.

<sup>4</sup> Description is primarily excerpts from “Timber Supply Review, Prince George TSA Public Discussion Paper, 2010”



The Prince George DFA is comprised of a diverse landscape of many different forests and ecosystems. From the moist Rocky and Cariboo Mountains in the north and east to the dry rolling plateau landscape of the south and west there is a wide variety in climate, soils, and topography. The DFA contains a large number of lakes and major rivers such as the Fraser, Nechako, McGregor, Salmon, Blackwater, Chilako, Bowron, Crooked, Willow, and Parsnip (LRMP, 1999). These rivers played an important role in the histories of the First Nations and early European settlement of the region. The forests that occupy the DFA are as diverse as the landscape they occupy. White spruce, lodgepole pine, Douglas fir, western red cedar, and many other coniferous and deciduous tree species occupy the land in a wide range of ages, composition, and structure.

### *2.1.2 Communities*

The DFA supports an estimated population of 88,189 residents<sup>5</sup>. The major population center in the District is the City of Prince George with a population of approximately 71,974 (2011). Other communities in the Prince George District include Bear Lake, Summit Lake, Hixon, Longworth, Penny, Sinclair Mills, Willow River, Upper Fraser, McLeod Lake, Nukko Lake, Giscome, Shelley, Dome Creek, Aleza Lake, Red Rock, Stoner, Beaverley, Mud River, Punchaw, Strathnaver and Isle Pierre.

The following First Nations communities have interests in the DFA: Lheidli T'enneh First Nation, McLeod Lake (Tsekani) First Nation, Nak'azdli Band, Nazko Band, Lhtako Dene (formerly known as the Red Bluff Band), and the Saik'uz First Nation. Two additional First Nations communities have extended interests into the DFA: Halfway River First Nation and the West Moberly First Nations. There is also a large Métis population in the District with interests in the DFA.

Fishing, hunting, gathering of berries, mushrooms, medicinal plants and other non-timber products are undertaken on traditional territories. It is important for First Nations to have the opportunity to provide input into forest management planning processes, such as this SFMP, to ensure cultural heritage resources are identified and appropriate practices implemented to mitigate potential impacts resulting from planned forestry activities. Conservation of historical and cultural features within the DFA is important, as is the involvement of First Nations people in management decisions, in order to promote a sustainable forest management. There are no final First Nation Treaty Agreements within the DFA. See the Ministry of Aboriginal Relations and Reconciliation website (<http://www.gov.bc.ca/arr/treaty/agreements.html>) for the current status of BC Treaty Negotiations within the DFA.

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<sup>5</sup> Reference: Statistics Canada. 2012. Census profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released February 8 2012. <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E>

### *2.1.3 Area Economy*

The forestry sector is a major component of the economy within the Prince George Forest District. There are 6 major sawmills, three large pulp mills, and numerous value-added manufacturing operations.

While the economy has been diversifying in recent years with strong growth in the commercial and service sectors, the forestry sector continues to play the dominant role in the region's economy.

In addition to mill-related employment, the forest sector provides employment in the form of harvesting operations, silviculture activities, planning and management. The importance of industrial forestry for the DFA highlights the need for sustainable forest management to ensure future resources will be present.

Considerable indirect forest industry employment is also generated through logging contractors, trucking firms, equipment supply, machinery repair, fuel distributors and a variety of other support services. Wood chips and sawdust, produced as a by-product of the lumber manufacturing process and from timber unsuitable for lumber, are used for pulp, paper, panelboard and pellet production in several facilities in and outside the area. The majority of those employed by the forest sector reside within the plan area.

Other major sectors in the area are mining, recreation, tourism and agriculture.

There are a number of existing mining operations and Prince George is a centre for mining supplies in the northern interior. The industrial mineral potential is rated as high on a significant portion of the DFA.

Recreation opportunities are provided by various interest groups within the DFA. Local residents and commercial tourism operators (guide outfitters, commercial lodges and resorts) make use of the extensive backcountry and wilderness values present within the DFA. Provincial Recreation Sites and Trails, campgrounds and access to rugged hiking opportunities along rivers, lakes and streams are some of the recreation opportunities available to the public due to the extensive forest road system in the DFA.

Commercial tourism through lodges, resorts and guided wilderness adventure experiences such as hunting, fishing and hiking is another forest dependent sector growing within the DFA. These commercial tourism operators, along with other members of the public, forest licensees, and other interest groups must achieve sustainable and integrated management of the forest resource in order to satisfy all their values. Proper management and forest planning with consideration of all parties will assist in the conservation and enhancement of recreational values for current and future forest use.

Most agricultural crops grown in the DFA supply feed (forage, grain and improved pastures) for a livestock industry. Vegetable farms and tree seedling nurseries are located along the Fraser and Chilako rivers and in the Reid Lake area. Non-soil bound farming enterprises (greenhouse nursery and poultry operations) are scattered around the City of Prince George.

### *2.1.4 Environment*

The Prince George DFA is comprised of a diverse landscape of many different forests and ecosystems. From the moist Rocky and Cariboo Mountains in the north and east to the dry rolling plateau landscape of the south and west there is a wide variety in climate, soils, and topography. The DFA contains a large number of lakes and major rivers such as the Fraser, Nechako, McGregor, Salmon, Blackwater, Chilako, Bowron, Crooked, Willow, and Parsnip (LRMP, 1999). These rivers played an important role in the histories of the First Nations and early European settlement of the region. The forests that occupy the DFA are as diverse as the landscape they occupy. White spruce, lodgepole pine, Douglas fir, western red cedar, and many other coniferous and deciduous tree species occupy the land in a wide range of ages, composition, and structure. The DFA's landscape has also been divided into "Natural Disturbance Units" (NDUs). As referenced by Craig DeLong (2002), the underlying assumption of natural disturbance unit

classification is that the biota of a forest is adapted to the conditions created by natural disturbances such as fire, wind, and insects. This SFMP uses NDUs for several of its landscape level objectives. The NDUs in the DFA are:

- 1) Boreal Foothills (subunit Mountain)
- 2) McGregor Plateau
- 3) Moist Interior (subunit Mountain)
- 4) Omineca (subunit Mountain)
- 5) Wet Mountain
- 6) Wet Trench (subunits Mountain and Valley)

NDUs are further divided into "biogeoclimatic classification" (BEC) zones. BEC considers the vegetation potential on a site (bio), the use of soils and geology (geo), and the overriding climatic factors. There are 14 BEC zones in British Columbia, with each zone divided into subzones and variants. There are 4 BEC zones in the DFA:

- 1) Sub-Boreal Spruce (SBS)
- 2) Engelmann Spruce- Sub-alpine Fir (ESSF)
- 3) Interior Cedar- Hemlock (ICH)
- 4) Alpine Tundra (AT)

Forest management in the DFA is based on the concepts of NDUs and BECs. By basing forest management decisions on the ecology of a site, the changes associated with forest operations should be more consistent with the patterns and structures of natural disturbance.

As research and technology advance in the field of forestry, land classifications and divisions continue to evolve. This SFMP will consider these changes through future adaptive management processes.

The DFA supports an abundance of wildlife. Resident mammals include moose, mule and white-tailed deer, elk, cougar, black and grizzly bear, coyote, wolf and woodland caribou. The area is home to approximately 13 furbearer species, including (but not limited) to beaver, otter, mink, muskrat, fisher, wolverine, and marten. Some 173 bird species are found within the planning area, with 52 species described as winter residents. Owls, cavity nesters and perching birds are widespread, as are waterfowl and some species of shorebirds. The area is home to a number of blue-listed wildlife species, including grizzly bear, trumpeter swan, fisher, great blue heron, and American bittern.

Forests are mostly dominated by lodgepole pine and spruce, with balsam at higher elevations and scattered patches of aspen. A history of frequent wildfires has left a mosaic of forest ages.

### *2.1.5 Species at Risk*

A list of species at risk has been developed for the DFA and can be found in Appendix 3. This list is a combination of legally and non-legally declared at-risk species. It includes species from Schedule 1 of the Federal Species at Risk Act (SARA), COSEWIC, from Schedule 1 of the provincial Identified Wildlife Management Strategy under the Forest and Range Practices Act (FRPA), and Blue and Red listed species listed with the BC Conservation Data Center. This list is complete for the DFA, but includes areas that are not forested and are little impacted by forest management activities. The species that are potentially impacted by forest management activities are called "Species of Management Concern".

### *2.1.6 Forest Use*

The forests of the Prince George DFA provide a wide range of forest land resources, including forest products (timber and non-timber, such as botanical forest products), recreation and tourism amenities, within significant wildlife habitat.

Extensive grassland and forested areas provide important forage for both livestock and wildlife. Ranching continues to play an important role in the DFA.

Parks, recreation areas and other Crown lands provide the setting for a host of activities including camping, hiking, wildlife and scenic viewing, fishing, hunting, hang-gliding, boating, river rafting, mountain-biking, four-wheel driving, ATV use, snowmobiling, and downhill, helicopter and cross country skiing.

Major highways pass through areas of exceptional natural scenery, providing easy access to national and provincial parks, such as Wells Gray Provincial Park and Jasper and Banff National Parks.

### *2.1.7 Forest Land Base*

The Prince George District covers about 3.57 million hectares in total, of which approximately 57 percent—2,044,295.5 hectares—is forest management land base (FMLB). About 555,859.5 hectares of the Forest Management Land Base (FMLB) area in the Prince George District are in reserves for old growth, wildlife tree patches or riparian areas, in areas of environmental sensitivity or low productivity, support non-merchantable forest types, or for other reasons are unavailable for timber harvesting. About 42 percent of the total TSA area is included in the current timber harvesting land base of 1,488,436 hectares. A detailed area net down for Canfor's DFA in the Prince George is found in Table 1.

**Table 1: Area Summary for Canfor DFA<sup>6</sup>**

Licensee Operating Area	Netdown Categories					Forested <sup>4</sup>	Total Area
	Excluded <sup>1</sup>	Non-Forest	Park	Other Non-THLB <sup>2</sup>	THLB <sup>3</sup>		
Not Assigned	226,733.0	181,633.3	169,004.0	94,886.8	36,243.3	131,130.1	708,500.4
Pct of area	32%	26%	24%	13%	5%	19%	100%
BCTS	44,792.5	67,726.6	1,260.2	110,192.8	329,107.7	439,300.5	553,079.8
Pct of area	8%	12%	0%	20%	60%	79%	100%
<b>Canfor</b>	<b>211,063.6</b>	<b>178,813.0</b>	<b>22,130.5</b>	<b>275,787.5</b>	<b>811,710.1</b>	<b>1,087,497.6</b>	<b>1,499,505.0</b>
<b>Pct of area</b>	<b>14%</b>	<b>12%</b>	<b>1%</b>	<b>18%</b>	<b>54%</b>	<b>73%</b>	<b>100%</b>
Carrier	3,069.5	25,033.1	130.4	38,786.7	101,809.1	140,595.8	180,793.6
Pct of area	2%	14%	0%	21%	56%	78%	100%
Dunkley	88,159.2	1,063.5	-	72.0	266.7	338.7	89,600.4
Pct of area	98%	1%	0%	0%	0%	0%	100%
Lakeland	1,549.1	9,339.8	4.4	6,134.3	66,724.0	72,858.3	89,660.0
Pct of area	2%	10%	0%	7%	74%	81%	100%

<sup>6</sup> Reference: Data for table provided from Ecosystem Representation Analysis Report Jan 2012 Forest Ecosystems Solutions Ltd.

Licensee Operating Area	Netdown Categories					Forested <sup>4</sup>	Total Area
	Excluded <sup>1</sup>	Non-Forest	Park	Other Non-THLB <sup>2</sup>	THLB <sup>3</sup>		
West Fraser	1,056.4	248.8	49.7	2,743.5	8,897.2	11,640.7	12,995.6
Pct of area	8%	2%	0%	21%	68%	90%	100%
Winton Global	4,322.9	34,610.6	306.4	53,204.9	170,034.7	223,239.7	262,479.6
Pct of area	2%	13%	0%	20%	65%	85%	100%
<b>TFL30</b>	<b>457.0</b>	<b>26,503.0</b>	<b>2,148.0</b>	<b>19,044.0</b>	<b>132,443.0</b>	<b>151,487.0</b>	<b>180,595.0</b>
<b>Pct of area</b>	<b>0%</b>	<b>15%</b>	<b>1%</b>	<b>11%</b>	<b>73%</b>	<b>84%</b>	<b>100%</b>
Total	488,425.5	489,535.2	194,898.8	555,859.5	1,488,436.0	2,044,295.5	3,577,209.4
	14%	14%	5%	16%	42%	57%	100%

1 - Areas classified as non-crown ownership, agriculture and settlement, and unclassified lands. 2 - Includes wildlife, riparian, VQO, ESA, physically inoperable and economically inoperable. 3 - Timber Harvesting Land Base. 4 - Excludes non-forest, parks and excluded areas.

## 2.2 Mountain Pine Beetle

### 2.2.1 Overview

Mountain pine beetle has severely impacted mature lodgepole pine (PI) stands in the Prince George DFA. A summary of the current situation is described based on excerpts from the following publications:

- Prince George TSA – MFR Rationale for Allowable Annual Cut Determination. 2011<sup>7</sup>.
- Prince George TSA – MFR Timber Supply Review Public Discussion Paper. 2010<sup>8</sup>.
- Beetle Facts, MFLNRO website<sup>9</sup>.
- Forest Health Strategy – Prince George TSA, March 2011<sup>10</sup>

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 BC's interior have been increasing steadily since 1994 with an exponential increase seen in 2004 as a result of the 2003 beetle flight.

### 2.2.2 Area Affected<sup>11</sup>

Mountain pine beetle is considered the top forest health priority in the Prince George District within which the DFA is located. In the forests of the Prince George DFA, pine still represents 8.1 million cubic metres or 20 percent of the mature volume within the THLB. Mature is considered to be 60 years old or greater, and susceptible to the beetle epidemic within the TSA.

### 2.2.3 Strategy & Response

The Prince George TSA Forest Health Strategy has been developed to provide guidance for harvesting of lodgepole pine (PI) stands susceptible to MPB attack. This document is updated annually. Planning and harvesting of stands affected by MPB needs to maintain other resource values, as well as protect mid-term timber supply values. Mountain pine beetle management in the Prince George District has generally transitioned from aggressive to salvage.

Salvage activities for mountain pine beetle have been directed at the mature timber types. Potential rehabilitation of immature stands through the Forests for Tomorrow program is being contemplated.

Management objectives concerning MPB include:

- Ensure that Salvage strategy targets are met;
  - Salvage - minimize unsalvaged losses by harvesting beetle-killed trees through large-scale operations.

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<sup>7</sup> Reference: <http://www.for.gov.bc.ca/hts/tsa/tsa24/>

<sup>8</sup> Reference: <http://www.for.gov.bc.ca/hts/tsa/tsa24/>

<sup>9</sup> Reference: [http://www.for.gov.bc.ca/hfp/mountain\\_pine\\_beetle/facts.htm](http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/facts.htm).

<sup>10</sup> Reference: Prince George TSA Forest Health Strategy 2011, March 2011

<sup>11</sup> Description is primarily excerpts from “Prince George TSA Forest Health Strategy 2011, March 2011”

- Reduce negative impacts of bark beetle infestations and salvage operations on biodiversity and other forest values;
- Direct harvest into pine-leading stands;
- Retain attacked stands that have a secondary structure component that makes them viable in the mid-term;
- Ensure immediate reforestation of attacked areas.

These objectives are consistent with the Provincial Mountain Pine Beetle Action Plan<sup>12</sup>, and the goals and management direction of the Prince George LRMP.

Management strategies have assisted in securing the maximum value in pine forests that have been killed or threatened by the beetle. The majority of the Prince George District is currently following the Salvage strategy.

#### *2.2.4 The Extent of Current & Future Infestations*

To determine the extent of current and future infestations, the Timber Supply Review (TSR) 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 Forest Health Strategy were all factored into the Chief Forester's Allowable Annual Cut (AAC) determination for the Prince George Timber Supply Area (2011).

#### *2.2.5 Summary of the Chief Forester's AAC Determination for the Prince George TSA*

Effective January 11, 2011, the new AAC for the Prince George TSA (within which the DFA is located) was set at 12,500,000 cubic metres per year including the following partitions:

- a maximum of 3.5 million cubic metres attributable to non-pine species, and non-cedar and non-deciduous leading stands;
- a maximum of 23 000 cubic metres attributable to cedar-leading stands; and
- a maximum of 160 000 cubic metres attributable to deciduous-leading stands in the Prince George and Fort St. James Forest Districts.

In addition to these partitions, it is the Chief Forester's expectation that a maximum of 875 000 cubic metres per year come from spruce-leading stands.

#### *2.2.6 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., cut block 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 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.

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<sup>12</sup> Reference: [http://www.for.gov.bc.ca/hfp/mountain\\_pine\\_beetle/actionplan/2006/Beetle\\_Action\\_Plan.pdf](http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/actionplan/2006/Beetle_Action_Plan.pdf)



### *2.2.7 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.

### *2.2.8 Outlook*

For 2011 (Figure 2), the Provincial-Level Projection of the Current MPB Outbreak (BCMPB.v8<sup>13</sup>) projected that approximately 100,000 cubic metres of pine would be killed in the Prince George Forest District. The projected kill for 2012 is also 100,000 cubic metres. If beetle populations continue to expand as predicted by the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO), the cumulative kill is expected to be approximately 64 percent of the total mature pine volume in the Province by 2021.

The most recent projection (2011) of the cumulative amount of pine volume killed in the Prince George Forest District in which the DFA is located, indicates that the amount of volume killed will be less than originally anticipated (Figure 3). Currently, it is estimated that 49 million m<sup>3</sup> have been killed as of 2011 compared to a projection in 2007 of 55 million m<sup>3</sup> killed in 2011. It is estimated that the total amount of volume killed in 2020 will be 50 million m<sup>3</sup> compared to an estimate of 56 million m<sup>3</sup> in 2020 from the 2007 projection.

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<sup>13</sup> Reference: <http://www.for.gov.bc.ca/ftp/hre/external!/publish/web/bcmpb/year8/BCMPB.v8.BeetleProjection.Update.pdf>

<http://www.for.gov.bc.ca/ftp/hre/external!/publish/web/bcmpb/year8/BCMPB.v8.NoMgmt.SummaryOfKill.LumpedTFLs.forDistribution.xlsx>

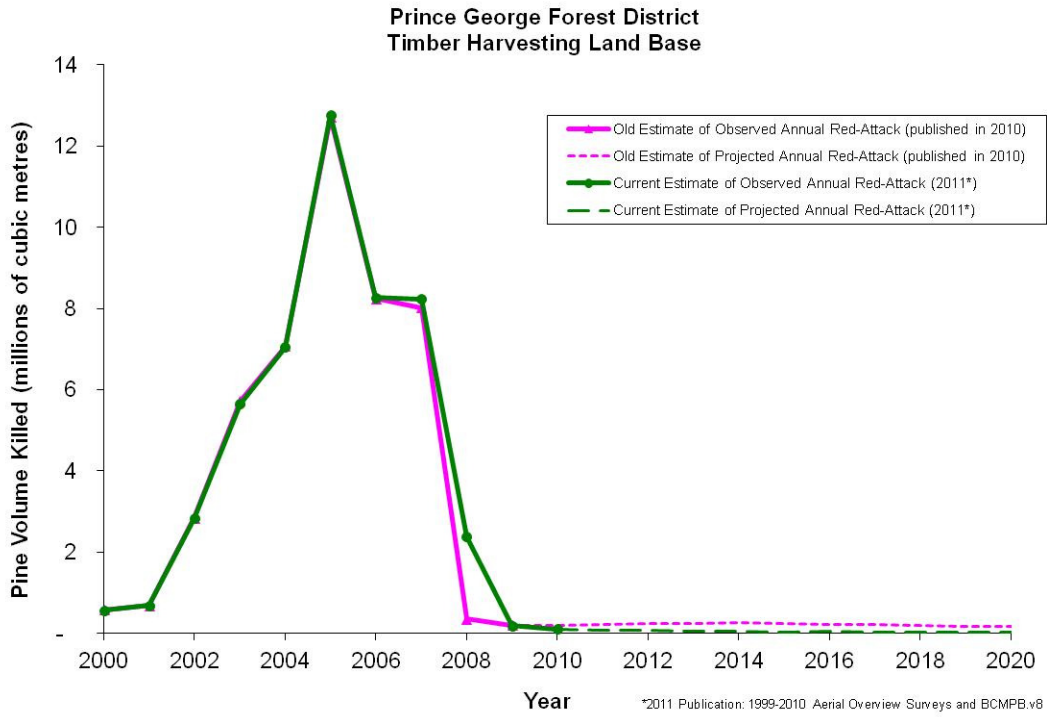


Figure 2: Estimated Observed and Projected Annual Red-Attack in the Prince George Forest District (Old and Current -2011).

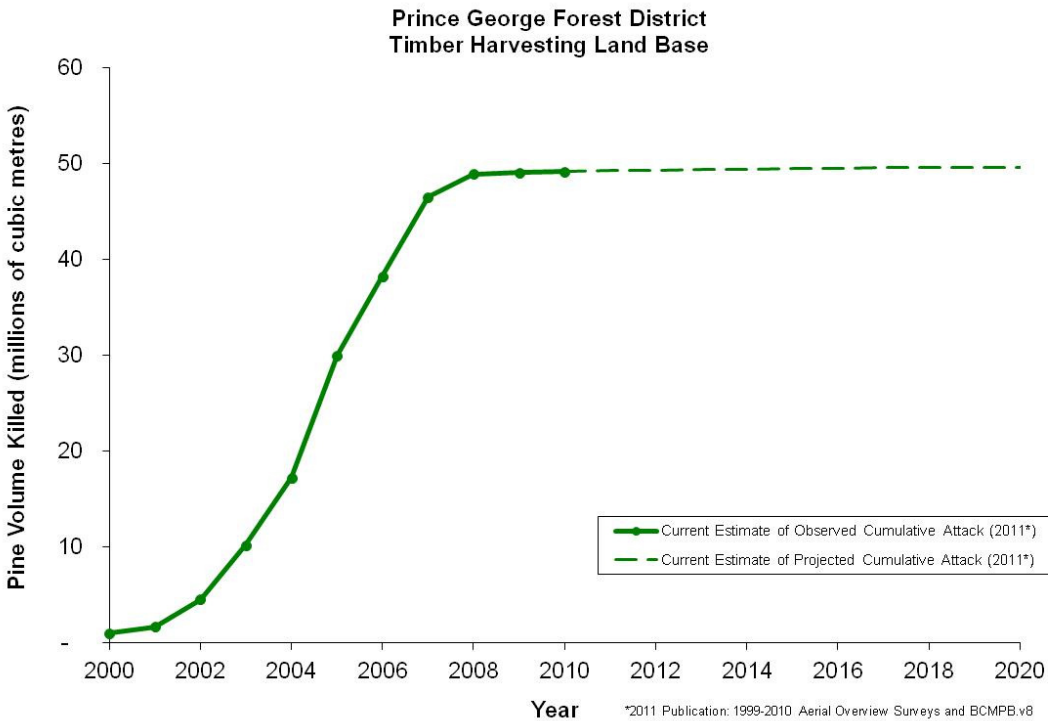


Figure 3: Current Estimate of Observed and Projected Cumulative Attack in the Prince George Forest District (2011).

## 2.3 Other Major Factors at Play in the DFA

### Prince George TSA Biodiversity Order<sup>14</sup>

In 2004, through a joint partnership between the Prince George Timber Supply Area Forest Licensees and the Northern Interior Region of the Ministry of Sustainable Resource Management (MSRM), landscape level objectives for biodiversity management were developed using local-level research of Natural Range of Variability (NRV) for the following elements:

- Old forest retention;
- Interior forest condition for old forest;
- Young forest patch size distribution.

The Values, Objectives, Indicators and Targets (VOITs) in this SFMP, have been developed to be consistent with the order to the extent practicable.

### Fisheries Sensitive Watersheds (FSW)<sup>15</sup>

In March 2013, two Government Actions Regulation (GAR) orders established FSW's and associated objectives in the Prince George District. The objectives relate to the maximum allowable hydrologically disturbed area, management of fine sediment production, the maximum allowable stream crossing densities, maintaining the recruitment of large woody debris, and maintaining channel widths at stream crossings.

The VOITs in this SFMP were developed to be consistent with the drafts of the FSW orders. As the final orders are consistent with the drafts, the SFMP did not need to be amended to reflect the final orders.

### Prince George Land and Resource Management Plan (LRMP)<sup>16</sup>

The Government of British Columbia announced the Prince George Land and Resource Management Plan (LRMP) in January 1999. The LRMP addressed the long-term balance of environment and economy in the District. It provided access to timber for the local forest industry, certainty for the mining, ranching and tourism industries while also establishing conservation and recreation objectives for many natural values in the District. The stability and security provided by the plan ensures economic and social stability and increased opportunities for growth and investment throughout the region.

## 2.4 Licensee Operating Areas

As a result of the mountain pine beetle infestation, Canfor continues to focus forest management planning and harvesting activities on pine leading stands. The mountain pine beetle epidemic has had an effect on the ecological, social and economic indicators developed for this SFM Plan. The focus on pine harvest has resulted in additional Non - Replaceable Forest Licences (NRFL) being awarded to other licensees. Volume from licenses outside the District has been transferred into the District on a short-term basis to

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<sup>14</sup> Reference: ILMB, 2004. Order Establishing Landscape Biodiversity Objectives for the Prince George Timber Supply Area. October 20, 2004.

<sup>15</sup> Reference: <http://www.env.gov.bc.ca/wld/frpa/fsw/approved.html>

<sup>16</sup> Reference: <http://www.ilmb.gov.bc.ca/slrp/lrmp/princegeorge/pgeorge/index.html>

help salvage as much pine as possible. Appendix 5 provides a detailed list of the license volumes that could be harvested in the DFA and an assessment of the risk this might pose to the SFMP.

Other licensees may conduct harvesting and associated activities on the DFA under authority given by the British Columbia government. Other licensees are responsible for the construction and maintenance of roads and stream crossings necessary to access the harvest areas approved by the British Columbia government.

Other licensees are responsible for hiring competent and skilled employees and are responsible for the direction, supervision, training and control of their employees. The performance of other licensees is subject to the review and inspection of British Columbia government compliance and enforcement officers and must fully comply with the applicable laws and regulations while operating on the DFA. The signatories to this plan do not have the right to direct or control other licensees and their employees and cannot be responsible for their activities in the DFA under this SFM plan.

The signatory to this plan has good working relationships with other operators in the Prince George District and communicates their SFM commitments to all known licensees prior to the commencement of operations in the DFA.

Of all the volume that could be harvested in the DFA, 45.7% is directly controlled by Canfor (the plan signatory), with the remainder of the volume considered low risk or nil risk to the SFMP. Because of this the overall risk of other operators impacting the VOIT's for this plan is considered to be low.

## **3.0 THE PLANNING PROCESS**

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### **3.1 The CSA Certification Process**

The CSA Sustainable Forest Management (SFM) Standard, initially developed in 1996 and subsequently revised and improved in 2002 and again in 2009 is Canada’s national certification standard. The standard is a voluntary tool that provides independent third party assurance that an organization is practicing sustainable forest management. Consistent with most certifications, the CSA standard expects compliance with existing forest policies, laws and regulations.<sup>17</sup>

Participants under the CSA certification system must address the following two components:

- Participants must develop and achieve indicators and targets for on-the-ground forest management, monitored through an annual public review with the input of the public and Aboriginals (Sec 3.1.1 following).
- Participants who choose to be registered to the CSA standard must incorporate CSA-defined systems components into an internal environmental management system (EMS) (Sec 3.1.2 following).

For a licensee seeking certification to the CSA SFM standard, the DFA SFMP or a licensee-specific plan, complimentary to the DFA SFMP, is developed. The licensee-specific plans may contain additional information such as their defined forest area and internal means to monitor and measure the DFA SFMP components.

Applicants seeking registration to the CSA standard require an accredited and independent third-party auditor to verify that these components have been adequately addressed. Following registration, annual surveillance audits are conducted to confirm that the standard is being maintained. A detailed description of these two components and a summary of the CSA registration process are as follows.

#### ***3.1.1 Public/Aboriginal Involvement: Performance Requirements & Indicators***

The CSA standard includes performance requirements for assessing sustainable forest management practices that influence on-the-ground forestry operations. The performance requirements are founded upon six sustainable forest management criteria:

- conservation of biological diversity;
- conservation of forest ecosystem condition and productivity;
- conservation of soil and water resources;
- forest ecosystem contributions to global ecological cycles;
- provision of economic and social benefits; and
- accepting society’s responsibility for sustainable forest management.

Each of these criteria has a number of “elements” that further define the criteria. The criteria and associated elements are all defined under the CSA standard and must be addressed during development of the SFMP. The criteria are endorsed by the Canadian Council of Forest Ministers and are aligned with international criteria. New to the CSA Standard (Z809-08 version) is the need to have specific discussion on selected forest management topics during the public participation process. Also new are the requirements for the SFMP to contain core indicators for nearly all of the elements.

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<sup>17</sup> In the case of the SFMP for the Prince George DFA, this includes compliance with the strategic direction provided in the Prince George Land and Resource Management Plan (LRMP).

For each set of criteria and elements, forest managers, Aboriginals and the public identify local values and objectives. Core and local indicators and targets associated with each are assigned to the values and objectives to measure performance.

**Values** identify the key aspects of the elements. For example, one of the values associated with “species diversity” might be “sustainable populations of native flora and fauna.”

**Objectives** describe the desired future condition, given an identified value. For example, the objective to meet the value of sustainable populations of native flora and fauna might be “to maintain a variety of habitats for naturally occurring species.”

**Indicators** are measures to assess progress toward an objective. Indicators are intended to provide a practical, cost-effective, scientifically sound basis for monitoring and assessing implementation of the SFMP. There must be at least one indicator for each element and associated value. Core indicators have been included in the CSA standard for nearly all elements. Additionally, local indicators can be added to the SFMP.

**Targets** are a specific statement describing a desired future state or condition of an indicator. Targets provide a clear specific statement of expected results, usually stated as some level of achievement of the associated indicator. For example, if the indicator is “minimize loss to the timber harvesting land base,” one target might be “to have less than ‘x’ percent of harvested areas in roads and landings.”

Values, objectives, indicators, and targets apply to social, economic and ecological criteria and may address process as well as on-the-ground forest management activities. In the SFMP for the Prince George DFA, these indicators and targets were developed to be applied to the entire plan area.

As part of the process of developing values, objectives, indicators and targets, the PAG also assisted in the development of forecasts of predicted results for indicators and targets.

**Forecasts** are the long-term projection of expected future indicator levels. These have been incorporated into the SFMP targets as predicted results or outcomes for each target. Additional forecasting of indicators has occurred where there is some reliance on the TSR process. In these circumstances, forecasting is projected out over the next 250 years. More on the TSR process is available at: <http://www.for.gov.bc.ca/hts/pubs.htm>.

### *3.1.2 Public Review of Annual Reports & Third Party Audits*

Each year, the licensees compile a report that summarizes results for each of the indicators in the SFMP. This annual report is provided to the PAG for review and comment. Annual monitoring of achievements against indicators and targets, and comparing the actual results to forecasts, enables the SFMP to be continually improved. Continuous improvement is mandated by the CSA standard.

For a licensee registered to the CSA standard, conformance with the standard is assessed annually through surveillance audits carried out by a registered third party auditor. The audit confirms that the registrant has successfully implemented the SFMP and continues to meet the CSA Standard. Audit summaries are available to the public.

### *3.1.3 Internal Infrastructure: Systems Components*

The CSA SFM standard mandates a number of process or systems-related requirements called “systems components.” These systems components must be incorporated in a registrant’s internal environmental management system (EMS). Systems components include:

- **Commitment:** A demonstrated commitment to developing and implementing the SFMP.

- **Public and Aboriginal participation:** The CSA standard requires informed, inclusive and fair consultation with Aboriginals and members of the public during the development and implementation of the SFMP.
- **CSA-aligned management system:** The management system is an integral part of implementation of the SFMP and is designed to meet CSA standards. The management system has four basic elements: Planning, Implementing, Checking and Monitoring, and Review and Improvement. The management system, includes the following base components:
  - 1) Identify environmental risks.
  - 2) Identify standard operating procedures or develop performance measures to address significant risks.
  - 3) Develop emergency procedures in the event of an incident causing environmental impacts.
  - 4) Review all laws and regulations.
  - 5) Establish procedures for training. Provide updated information and training to ensure that forestry staff and contractors stay current with evolving forest management information and are trained to address environmental issues during forestry activities.
  - 6) If an incident does occur, conduct an investigation or incident review and develop an action plan to take corrective action, based on the preparation undertaken in steps 1 to 5.
- **Continual improvement:** As part of a licensee's management system, the effectiveness of the SFMP is continually improved by monitoring and reviewing the system and its components. This includes a review of ongoing planning, public process and Aboriginal liaison to ensure that the management system is being implemented as effectively as possible.

### *3.1.4 CSA Registration*

Following completion of a sustainable forest management plan, and the development of an environmental management system in accordance with the CSA standard, a licensee may apply for registration of its DFA. The determination of whether all the components of an SFM system applied to a DFA are in place and functional involves an on-the-ground audit of the DFA including field inspections of forest sites. The intent of the registration audit is to provide assurance that the objectives of sustainable forest management on the DFA are being achieved. The registration of a licensee's DFA follows a successful registration audit by an eligible independent third party auditor who has assessed and determined:

- An SFMP that meets the CSA Standard, has been developed and implemented, including confirmation that quantified targets for meeting sustainable forest management criteria have been established through a public participation process;
- An SFM Environmental Management System has been developed and is being used to manage and direct achievement of the SFMP indicators and targets; and
- Progress toward achieving the targets is being monitored, and monitoring results are being used for continual improvement of the SFMP and Environmental Management System.

A typical registration audit may include:

- Meeting with the advisory group facilitator to review the public advisory process;
- Interviews with public advisory group members;
- A review of monitoring and reporting responsibilities related to CSA indicators and targets;
- Meetings with government officials to discuss licensee performance and government involvement in development of the SFMP;
- Field reviews visiting harvest and road construction operations;
- Interviews with staff and/or contractors to review their understanding of the environmental management system requirements; and

- Meetings with management to assess the level of commitment to environmental performance and sustainability.

In addition to the registration audit, regular surveillance audits are conducted to examine performance against all aspects of the SFM System, including the requirement that regulatory standards and policy requirements are met or exceeded.

### **3.2 The Prince George SFM Planning Process**

The SFMP was developed by the licensees based on advice and recommendations provided by the PAG. The plan was developed to be in compliance with all existing legislation and policy and consistent with the strategic direction of higher level plans such as the Prince George Land and Resource Management Plan (LRMP). The plan is continually updated and improved to incorporate new information, changing values, recommendations from monitoring activities and new circumstances.

#### ***3.2.1 Licensee Participation***

The licensees who hold replaceable Forest Licenses, worked with the PAG to develop initial performance measures (values, objectives, indicators and targets) for the SFMP that would meet the CSA Z809-02 standard. Originally, Canfor, BCTS, Carrier Lumber, Lakeland Mills and Winton Global were certified to the CSA standard for the Prince George SFMP. BCTS, Carrier Lumber, Lakeland Mills and Winton Global have since dropped their CSA certification and therefore are not signatories to this plan. On publicly owned land, the responsibility and accountability for managing BC forests is ultimately with the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO); however, the signatory to this plan is held responsible for forest management under legislative and contractual agreement through the tenure agreements.

The MFLNRO has participated in the SFM planning process in a number of roles including:

- Participation in the development of the original suite of SFM values, objectives, indicators and targets;
- Participation as an observer at Public Advisory Group meetings; and
- Provision of technical support to the planning process.

The licensee makes efforts to communicate periodically with Non-Replaceable Forest Licence (NRFL) holders to assess their impact on indicators in the SFM Plan.

To address the impact that other licensees may potentially have on achieving the targets, the participating licensee has developed a risk ranking matrix (Appendix 5) to display the estimated impact on these operations, and provide confidence that the reporting is consistent with the reality of operations on the DFA.

#### ***3.2.2 Public Participation***

The PAG was formed to assist the licensee in developing the SFMP by identifying local values, objectives, indicators and targets and evaluating the effectiveness of the plan.

Members of the PAG represented a cross-section of local interests including environmental organizations, Aboriginals, resource-based interests and research specialists. An open and inclusive process was used to formulate the public advisory group. Local Aboriginals were formally invited to participate. Various government ministries provided technical support to the SFM planning process, including information on resources and policy issues. The group developed, and was guided by, the Terms of Reference (TOR). The TOR was consistent with the CSA standard, and also specified that the process for developing the SFMP would be open and transparent. As part of updating the SFMP to meet the requirements of the



revised 2008 CSA standard (Z809-08), considerable discussion occurred on specific topics related to the six Criteria.

The PAG reviews the annual report prepared by the licensee to assess achievement of indicators and targets. This monitoring process provides the licensee, the public and Aboriginals with 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 SFMP.

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## **4.0 STRATEGY GUIDING THE SFMP**

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### **4.1 SFMP Strategy for the DFA**

A set of strategies has been developed to progress toward achievement of targets for the indicators in the SFMP. These strategies document the relevance of the indicator to the SFMP and sustainability, and summarize actions required to meet the targets.

The SFMP utilizes indicators and targets that:

- reflect values and objectives from the LRMP, Fisheries Sensitive Watersheds, Forest Health, Mid-Term Timber Supply, etc.;
- are guided by the Canadian Council of Forest Ministers' Criteria and Elements; and
- are within the ability of the forest industry to influence and manage.

Applicable strategies are documented in the detail sheets for each indicator in Section 5.7 of the SFMP.

### **4.2 Additional Guidance**

The licensee is also guided by the regulations, laws and policies established by the federal, provincial and municipal governments.

The direction set forth in legislation as well as additional policies provided by the District Managers guides strategies to manage forest operations and to provide high quality fibre for licensee operations over the long-term. At the same time, the licensee will make efforts to manage and balance the landscape for biological diversity, global cycles, soil, water and social responsibility.

## **5.0 INDICATORS & INDICATOR MATRICES**

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The PAG 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. SFMP indicators (core and local) and their targets are described in Section 5.7. A summary table showing all criteria and elements and associated local values, objectives, indicators and targets is provided in Appendix 2.

In an SFMP, 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 SFMP for the Prince George DFA. Core indicators prescribed within the latest CSA standard (Z809-08) have been integrated into the plan using the numbering system found within the standard. Indicator statements have been developed for each core indicator, and some core indicators incorporate more than one statement. These serve to put the target into context against the core indicator and make the target easily measurable. 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 SFMP. 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.

The licensee monitors the achievement of targets annually. Monitoring procedures for each target in the SFMP are described below. Management strategies provide further direction to the performance measures (indicators and targets) and serve as a guide for the licensee in their annual monitoring activities.

### **5.1 Objectives, Indicators & Targets**

The Prince George SFMP process has served to further refine the information and concerns of the local public. Incorporating these concerns and ideas into licensee operations through the established indicators and targets and ongoing monitoring ensures long-term sustainability of the forest resource. Any indicators established in this SFMP that are conducive to long-term projections are as noted below.

Section 6.2 describes the plans, policies and management strategies that support the achievement of the targets in the SFMP.

### **5.2 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 SFMP. 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.

### **5.3 Current Status of Indicators**

Current status of each indicator is as reported and updated in annual SFMP performance reporting. To obtain current information, please refer to the most recent monitoring report on the Prince George SFMP website: <http://www.sfmptsa.com/> or <http://www.canfor.com/responsibility/environmental/plans>

## 5.4 Forecasting

Forecasts are the long-term projection of expected future indicator levels. These have been incorporated into the SFMP targets as predicted results or outcomes for each target.

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 SFMP indicators. Generally, the target is being achieved for SFMP 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.

## 5.5 Regional Forecasting Related to the SFMP

### Prince George TSA Timber Supply Review

The Prince George Timber Supply Area Rationale for AAC Determination, January 11, 2011<sup>18</sup>, included sensitivity analysis around the shelf life of beetle killed pine and the harvesting of non-pine stands in the short-term. The analysis was conducted using information related to the timber harvesting land base, 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 Public discussion paper and the data package (January 2010)<sup>19</sup>. Further information pertaining to assumptions and analysis can be found within the Chief Forester's Rationale for AAC Determination for the Prince George TSA (January 2011).

### TFL 30 Timber Supply Review

The timber supply analysis in support of TFL30 Management Plan #9 was completed in 2003, followed by the allowable annual cut (AAC) determination effective July 1<sup>st</sup>, 2003 in which the AAC was set at 330,000 m<sup>3</sup>/year.

In 2006, the Chief Forester approved the postponement of the next TFL30 AAC determination to July 1<sup>st</sup> 2013, concluding that the factors used to assess timber supply had not changed to the extent that they would have an impact on existing timber supply.

Canfor submitted TFL30 Management Plan #10 to the Ministry in September 2013. In February 2014, the Deputy Chief Forester released the Rationale for Allowable Annual Cut Determination, setting the AAC at 412,500m<sup>3</sup>.

[http://www.for.gov.bc.ca/hts/tfl/tfl30/2014\\_current/30tfra14.pdf](http://www.for.gov.bc.ca/hts/tfl/tfl30/2014_current/30tfra14.pdf)

### Ecosystem Representation Analysis

Canfor completed an Ecosystem Representation Analysis across their operations in BC in 2012. This analysis was used to determine the relative abundance of ecosystem groups and highlight rare or uncommon groupings that may need special management. This analysis supports the indicator and target for indicator 1.1.1 (percent representation of ecosystem groups across the DFA). For more details on the analysis, please refer to the indicator detail sheet for 1.1.1 in Section 5.7.

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<sup>18</sup> Reference: <http://www.for.gov.bc.ca/hts/tsa/tsa24/>

<sup>19</sup> Reference: <http://www.for.gov.bc.ca/hts/tsa/tsa24/>

## **5.6 Legal Requirements**

Awareness of legal requirements is essential when considering suitable Objectives for an Element and determining appropriate Indicators and Targets. The licensee ensures 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, and participating in joint legislative review committees are just some of the methods used by the licensee to remain current with legislation.

## 5.7 Indicators in the SFMP

### 5.7.1 1.1.1 Ecosystem area by type

<b>Indicator</b>	<b>1.1.1 Ecosystem area by type</b>
<b>Indicator Statement(s)</b>	1.1.1: Total hectares logged in rare and uncommon ecosystems
<b>Element(s)</b>	1.1 Ecosystem Diversity
<b>Value(s) and Objective(s)</b>	<p><u>Value 1.1:</u> Well-balanced and functioning ecosystems that support natural processes.</p> <p><u>Objective 1.1:</u> Maintain landscapes that support the natural diversity, variety and pattern of ecosystems.</p>
<b>Strategies</b> Description	<p>Maintaining representation of a full range of ecosystem types is a widely accepted strategy to conserve biodiversity. 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 such as Biogeoclimatic Ecosystem Classification – BEC or Predictive Ecosystem Mapping – PEM) rather than by age and type of structures as derived from classic forest inventories. Most ecosystem classification systems use an integrated hierarchical classification scheme that combines climate, vegetation and site classifications. This mapping is 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, and</li> <li>Wildlife habitat management.</li> </ol> <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, including:</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).</li> </ul> <p>An analysis of ecosystem representation across all licensee operations was conducted in 2011<sup>20</sup>. This analysis included BCTS's operating areas as at the time it was signatory to the Plan, and determined the abundance and representation of ecosystem groups within four distinct regions and 13 management units. The following steps were carried out for this analysis:</p> <ul style="list-style-type: none"> <li>Identifying the non-harvesting land base,</li> <li>Classifying the forested land base into ecosystem groups, and</li> </ul>

<sup>20</sup> Ecosystem Representation Analysis Final Report January 18<sup>th</sup>, 2012 Forest Ecosystem Solutions Ltd.

	<ul style="list-style-type: none"> <li>Evaluating the amount and how the ecosystem groups are distributed in the harvesting and non-harvesting land base.</li> </ul> <p>This management strategy allows for contributions from all areas within the DFA. The objective would be to fill from the non-harvesting land base first. The Prince George DFA is mostly within the North – East Mountains region and a portion of the West – Central region and comprises 16 unique forested ecosystem groups (revised downwards from 23 ecosystem groups as a result of BCTS-PG’s departure from the Plan, as 7 groups were wholly represented within BCTS-PG’s operating areas).</p>																																																						
<p>Means of Achieving Objective &amp; Target</p>	<p>Target selected as a proactive measure to identify and conserve rare and uncommon ecological communities. Rare or uncommon ecosystem groups were identified by mapping at the BEC variant level or PEM site series level.</p> <p>The following criteria was used to select the site series that would be considered rare or uncommon:</p> <ul style="list-style-type: none"> <li>The ecosystem group is present on the DFA (area &gt;0%),</li> <li>The forested area is &lt;= 10,000 ha in the West-Central and North – East Mountains regions,</li> <li>The representation class is:             <ul style="list-style-type: none"> <li>Low &lt;20% of the area is in the NHLB,</li> <li>Rare/uncommon abundance is &lt;0.1% of the forest area, and</li> </ul> </li> <li>&lt; 100% of the area of the ecosystem group is in the NHLB.</li> </ul> <p>Site series in these ecosystem groups are considered rare and should not be harvested. If these site series are encountered during field layout, they will be reserved from harvest by excluding them from the harvest area or reserving them in WTP’s (see indicator 1.1.4a).</p>																																																						
<p>Current Status, Predicted Results or Outcome</p>	<p>Sixteen ecosystem groups within the DFA were identified as rare/uncommon. All sites within this group are to be protected from harvesting. The following table lists the sites series (2012 Baseline data):</p> <table border="1" data-bbox="440 1115 1427 1879"> <thead> <tr> <th>Final Region</th> <th>Final Ecogroup Number</th> <th>Final Group Name</th> <th>Site Series</th> <th>Moisture-Nutrient regime</th> <th>Site Association</th> </tr> </thead> <tbody> <tr> <td>NE Mtns</td> <td>1</td> <td>xeric ICHvh2/wk4</td> <td>ICH vk2-02 ICH wk4-02</td> <td>Xeric; very poor-poor</td> <td>HwCw - Cladonia</td> </tr> <tr> <td>NE Mtns</td> <td>4</td> <td>xeric SBSmk1</td> <td>SBS mk1-02</td> <td>Xeric; very poor-medium</td> <td>Pl - Cladina - Step moss</td> </tr> <tr> <td>NE Mtns</td> <td>6</td> <td>xeric ICHwk3</td> <td>ICH wk3-02</td> <td>Xeric; very poor-poor</td> <td>Hw - False Azalea - Lichens</td> </tr> <tr> <td>NE Mtns</td> <td>16</td> <td>subxeric-submesic ICHwk4</td> <td>ICH wk4-04</td> <td>Subxeric-submesic; very poor-poor</td> <td>CwSxw-Velvet-leaved blueberry</td> </tr> <tr> <td>NE Mtns</td> <td>20</td> <td>subxeric-mesic SBS</td> <td>SBS vk-03 SBS wk3a-01</td> <td>Subxeric-submesic; poor-medium Mesic; poor-medium</td> <td>Sxw - Fd - Thimbleberry Sxw - Dogwood - Fairybells</td> </tr> <tr> <td>NE Mtns</td> <td>44</td> <td>subhygric ICHwk4</td> <td>ICH wk4-06</td> <td>Subhygric; medium-rich</td> <td>Sxw - Twinberry - Oak fern</td> </tr> <tr> <td>NE Mtns</td> <td>47</td> <td>subhygric-hygric ICHvk2</td> <td>ICH vk2-05</td> <td>Subhygric-hygric; medium-rich</td> <td>Cw - Devil's club - Ostrich fern</td> </tr> <tr> <td>NE Mtns</td> <td>51</td> <td>subhygric-hygric ESSFwk1/wk2</td> <td>ESSF wk1-06</td> <td>Subhygric-subhydryc; very poor-poor</td> <td>Bl - Horsetail - Sphagnum</td> </tr> </tbody> </table>	Final Region	Final Ecogroup Number	Final Group Name	Site Series	Moisture-Nutrient regime	Site Association	NE Mtns	1	xeric ICHvh2/wk4	ICH vk2-02 ICH wk4-02	Xeric; very poor-poor	HwCw - Cladonia	NE Mtns	4	xeric SBSmk1	SBS mk1-02	Xeric; very poor-medium	Pl - Cladina - Step moss	NE Mtns	6	xeric ICHwk3	ICH wk3-02	Xeric; very poor-poor	Hw - False Azalea - Lichens	NE Mtns	16	subxeric-submesic ICHwk4	ICH wk4-04	Subxeric-submesic; very poor-poor	CwSxw-Velvet-leaved blueberry	NE Mtns	20	subxeric-mesic SBS	SBS vk-03 SBS wk3a-01	Subxeric-submesic; poor-medium Mesic; poor-medium	Sxw - Fd - Thimbleberry Sxw - Dogwood - Fairybells	NE Mtns	44	subhygric ICHwk4	ICH wk4-06	Subhygric; medium-rich	Sxw - Twinberry - Oak fern	NE Mtns	47	subhygric-hygric ICHvk2	ICH vk2-05	Subhygric-hygric; medium-rich	Cw - Devil's club - Ostrich fern	NE Mtns	51	subhygric-hygric ESSFwk1/wk2	ESSF wk1-06	Subhygric-subhydryc; very poor-poor	Bl - Horsetail - Sphagnum
Final Region	Final Ecogroup Number	Final Group Name	Site Series	Moisture-Nutrient regime	Site Association																																																		
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NE Mtns	6	xeric ICHwk3	ICH wk3-02	Xeric; very poor-poor	Hw - False Azalea - Lichens																																																		
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NE Mtns	51	subhygric-hygric ESSFwk1/wk2	ESSF wk1-06	Subhygric-subhydryc; very poor-poor	Bl - Horsetail - Sphagnum																																																		

	NE Mtns	57	hygric SBS (devil's club)	ICH wk4-08	Hygric-subhygric; medium-very rich	Sxw - Devil's club - Lady fern
				SBS vk-07	Hygric; medium-very rich	Sxw - Devil's club - Ostrich fern
				SBS wk1-10	hygric; rich-very rich	Sxw - Devil's club - Lady fern
	NE Mtns	59	hygric ICHvk2	ICH vk2-06	Hygric-subhygric; rich	Cw - Sxw - Skunk cabbage
	NE Mtns	60	subhygric ICHvk2	ICH vk2-07	subhygric	Sb - Sphagnum
	NE Mtns	66	mesic-subhygric SBSvk	SBS vk-11	mesic - subhygric	Sitka Alder - Ladyfern
	NE Mtns	67	subhygric wk1	SBS wk1-11	subhygric	SbSxw - Scrub birch - Sedge
	NE Mtns	39	subhygric SBSwk1	SBS mw-05	Subhygric; poor	Sxw - Pink spirea
				SBS wk1-06	Subhygric; poor-medium	Sxw - Pink spirea - Oak fern
	West-central	1	xeric SBS mw	SBS mw-02	Very xeric-xeric; very poor-rich	Fd - Bl - Huckleberry
West-central	30	xeric-submesic SBSmk1/wk3a	SBS mw-04	Xeric-submesic; medium-rich	Sxw - Fd - Knight's plume	
<b>Forecast</b>	<p>By implementing the above strategy, it is forecast that rare and uncommon ecosystems that are &gt;= 2.0 ha and are not a part of site complexes will be conserved from harvest and, therefore, will continue at present levels into the future. The current conditions for this indicator were established via the Ecosystem Representation Analysis (Jan. 2012). The methodology and assumptions are clearly outlined in the report.</p> <p><i>Methods and Assumptions</i> - Target of 0 hectares logged in rare and uncommon ecosystems. Past performance and ingrained strategy has resulted in this result and it is reasonable to forecast this result into the foreseeable future.</p>					
<b>Target</b>	0 hectares.					
<b>Basis for the Target</b>	Proactive measure to identify and conserve rare and uncommon ecosystems.					
<b>Monitoring &amp; Measurement</b> Periodic	Identification of rare and uncommon ecosystems to occur with inventory updates that occur in conjunction with the Timber Supply Review (generally every 5 years).					
<b>Annual</b>	Report any incidents of harvesting that occurred in ecosystem groups defined as rare. Also report the number of hectares where harvesting occurred within uncommon ecosystem groups and the number of these hectares where specific management strategies to retain the characteristics of unmanaged forests were implemented.					
<b>Variance</b>	Based on assessments completed by professionals, those ecosystems deemed poor representation of the rare ecosystem can be harvested.					



**5.7.2 1.1.2 Forest area by type or species composition**

<b>Indicator</b>	<b>1.1.2 Forest area by type or species composition</b>
<b>Indicator Statement(s)</b>	1.1.2: Percent distribution of forest type (treed conifer, treed broadleaf, treed mixed) >20 years old across DFA
<b>Element(s)</b>	1.1 Ecosystem Diversity 1.3 Genetic Diversity
<b>Value(s) and Objective(s)</b>	<u>Value 1.1:</u> Well-balanced and functioning ecosystems that support natural processes. <u>Objective 1.1:</u> Maintain landscapes that support the natural diversity, variety and pattern of ecosystems. <u>Value 1.3:</u> Genetic Diversity. <u>Objective 1.3:</u> Maintain natural genetic diversity within planted crop trees and vegetative material.
<b>Strategies</b> Description	<p>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, as they provide structure and habitat for other organisms. Ensuring a diversity of tree species within their natural range of variation improves ecosystem resilience and productivity and positively influences forest health. The diversity of plant species also directly correlates to genetic diversity within a plant community. Reporting on this indicator will show a distribution of three broad classes of forest types (aspatial) and provide high level overview information on area covered by broad forest type, forest succession and management practices that might alter species composition.</p> <p>Ensuring maintenance of a diversity of tree species improves ecosystem resilience and productivity and positively influences forest health. Forests in Canada are classified according to an Ecosystem Classification System, which identifies the tree species that are most suited ecologically for regeneration in any particular site. This guides forest managers in maintaining the natural forest composition in an area and lends itself to long-term forest health and productive forests that uptake carbon.</p> <p>The BC government FREP report #14 on Tree Species Composition and Diversity in British Columbia (BCMOFR 2008) concluded that the amount of deciduous mixed stands at free growing in the Northern Forest Interior Region has increased significantly, from 2,811 hectares before harvest to 55,614 hectares at free growing. This is expected to continue in the short-term in both BC and Alberta as recently harvested areas regenerate naturally with ingress from early successional broadleaf species. While adding to the overall diversity of the DFA, many of these forests will revert back to coniferous mixed forests over time. To remove some of this short-term variation in the reporting of the indicator, forests less than 20 years of age will not be included in the reporting structure.</p> <p>Treed conifer forests are those where conifers dominate the species mix (at least 75% of trees are conifer), treed broad leaf forests are those where mostly deciduous trees dominate the species mix (at least 75% of trees are broad leaf) and mixed forests are those that fall within the middle range where neither conifer or broad leaf trees dominate the species mix.</p>
<b>Means of Achieving Objective &amp; Target</b>	Forest plans will incorporate reforestation strategies that retain the natural balance of broad forest types within the DFA. The Target addresses diversity and abundance of naturally occurring tree species on the landscape. Management control is restricted to areas of the Timber Harvesting Land Base (THLB).

<p><b>Current Status,</b> Predicted Results or Outcome</p>	<p>The table below shows the Current Status of the percent distribution of forest type (coniferous, broadleaf, mixed) &gt;20 years old across the DFA (2013 Baseline data).</p> <table border="1" data-bbox="440 275 1427 625"> <thead> <tr> <th>Forest Type</th> <th>Canfor's Operating Areas Within the PG District (ha)</th> <th>Canfor's TFL30 (ha)</th> <th>Park Apportionment (ha)</th> <th>Forest Area (ha)</th> <th>Forest Area (%)</th> </tr> </thead> <tbody> <tr> <td>Coniferous</td> <td>865,739</td> <td>109,548</td> <td>53,336</td> <td>1,028,623</td> <td>90.6</td> </tr> <tr> <td>Broadleaf</td> <td>16,550</td> <td>1,908</td> <td>567</td> <td>19,025</td> <td>1.7</td> </tr> <tr> <td>Mixed</td> <td>79,134</td> <td>5,338</td> <td>3,576</td> <td>88,048</td> <td>7.7</td> </tr> <tr> <td><b>Total</b></td> <td><b>961,423</b></td> <td><b>116,794</b></td> <td><b>57,479</b></td> <td><b>1,135,696</b></td> <td><b>100</b></td> </tr> </tbody> </table> <p>Data includes licensee Operating Areas within the DFA and a Parks &amp; Protected Areas apportionment. Based on the Vegetation Resources Inventory, the areas have been reduced for roads, seismic lines, oil &amp; gas tenures, and other non-THLB areas.</p>	Forest Type	Canfor's Operating Areas Within the PG District (ha)	Canfor's TFL30 (ha)	Park Apportionment (ha)	Forest Area (ha)	Forest Area (%)	Coniferous	865,739	109,548	53,336	1,028,623	90.6	Broadleaf	16,550	1,908	567	19,025	1.7	Mixed	79,134	5,338	3,576	88,048	7.7	<b>Total</b>	<b>961,423</b>	<b>116,794</b>	<b>57,479</b>	<b>1,135,696</b>	<b>100</b>
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<b>Total</b>	<b>961,423</b>	<b>116,794</b>	<b>57,479</b>	<b>1,135,696</b>	<b>100</b>																										
<p><b>Forecast</b></p>	<p>By implementing the above strategy, it is forecast that forest composition will be within the target ranges. Current state calculations show that composition is consistent with target ranges.</p> <p><i>Methods and Assumptions</i> - This indicator is forecast using data from TSR, however, it is localized and monitored at the DFA level using a standardized Canfor model utilizing VRI, Cengea Resources, Standard Unit information for WTP shapes, and a host of government-supplied layers. An indicator guidance document has been developed and is used to calculate the current state. Trends from previous TSR show the current strategy is resulting in stabilization of the forest composition; in other words, the forecast is assumed to be current state. This should be re-forecast at a minimum after every TSR data update.</p>																														
<p><b>Target</b></p>	<p>Treed Conifer: 73-93%, Treed Broadleaf: 1.5-6%, Treed Mixed: 5-15%</p>																														
<p>Basis for the Target</p>	<p>The need to maintain the biological diversity of forest ecosystems in future generation forests. Addresses diversity and abundance of naturally occurring tree species on the landscape. Management control restricted to areas of the Timber Harvesting Land Base (THLB).</p>																														
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>Report the area (total hectares and percent) of treed conifer, treed broad leaf, treed mixed forest types as updated for the most current Timber Supply Review (TSR) for the management unit. Reporting to occur every 5 years. Confirm that forest type reporting is within baseline levels.</p>																														
<p>Annual</p>	<p>n/a</p>																														
<p>Variance</p>	<p>None below proposed targets.</p>																														

**5.7.3 1.1.3 Forest area by seral stage or age class and 4.1.1 Net Carbon uptake**

<b>Indicator</b>	<b>1.1.3 Forest area by seral stage or age class</b> <b>4.1.1 Net Carbon uptake</b>
<b>Indicator Statement(s)</b>	1.1.3(a): Percent late seral distribution by ecological unit across the DFA.
<b>Element(s)</b>	1.1 Ecosystem Diversity 1.3 Genetic Diversity 4.1 Carbon Uptake and Storage
<b>Value(s) and Objective(s)</b>	<p><u>Value 1.1:</u> Well-balanced and functioning ecosystems that support natural processes.  <u>Objective 1.1.1:</u> Maintain landscapes that support the natural diversity, variety and pattern of ecosystems.</p> <p><u>Value 1.3:</u> Genetic Diversity.  <u>Objective 1.3:</u> Maintain natural genetic diversity within planted crop trees and vegetative material.</p> <p><u>Value 4.1:</u> Uptake and storage of carbon in forest ecosystems.  <u>Objective 4.1:</u> Facilitate carbon uptake and storage within harvested areas.</p>
<b>Strategies</b> Description	<p>The northern interior forest ecosystems have been historically influenced by the presence or absence of fire as a dominant form of natural disturbance. The similarities in fire return intervals, and disturbance sizes and patterns form the basis for categorizing each of the ecosystems into natural disturbance units (NDU), which in turn is used to provide guidance for maintaining biodiversity. The DFA contains six NDUs and four biogeoclimatic ecosystem classification (BEC) zones.</p> <p>Biodiversity can be affected by the disruption of natural processes. Future maintenance of biodiversity and genetic diversity is in part dependent upon the maintenance of representative habitats and seral stages at the landscape and watershed level. Forests in their late seral stage offer unique habitat to certain plant and animal communities. Maintenance of a component of late seral stage forests within a natural range of variation will contribute to an appropriate balance of forest age classes.</p> <p>The relative amount of late seral stage or old forests have generally been mandated by Higher Level Plans or provincial orders (ie. the Order Establishing Landscape Biodiversity Objectives for the PGTSA – applicable to the PG District; and the Provincial Non-Spatial Old Growth Objective – applicable to TFL30). Where actual percent late seral is less than the desired target in a given ecological unit, a recruitment strategy will be developed.</p> <p>For the purpose of this DFA indicator, late seral is defined as “old forest” as per:</p> <ul style="list-style-type: none"> <li>PG TSA Biodiversity Order (applicable to the PG District): “Old forest” means &gt;140 year old forest stands, from available forest inventory sources, for all natural disturbance units with the exception of the Moist Interior-Plateau (all biogeoclimatic variants), and the McGregor Plateau (SBS mk1 and SBSmh), where forests will be considered to be those stands &gt;120 years;</li> </ul> <p>And as per:</p> <ul style="list-style-type: none"> <li>Provincial Non-Spatial Old Growth Objective (applicable to TFL30): “Old forest” means &gt;140 year old forest stands in the SBSwk1 &amp; mk1; and &gt;250 year old forest stands in the SBSvk, ICHvk1, ESSFwk2 &amp; wc3.</li> </ul> <p>The PG TSA Biodiversity Order allows for a portion of the old growth targets to be achieved using stands of “Natural Forest Areas” - dead pine stands. Plan signatories are working with</p>

	<p>Government and other forest licensees to develop options related to the requirements of the PG TSA Non-Spatial Biodiversity Order. It is expected that appropriate options will be developed to determine how much, if any dead pine should contribute to old growth attributes.</p> <p>Canfor’s Forest Stewardship Plan was amended in early February 2014 to include a strategy for identifying spatial Draft Old Growth Management Areas (OGMAs) on TFL30 by December 31<sup>st</sup> 2015. The Draft OGMAs may include stands with seral stages (ages) that are aligned with the seral stages in the PG TSA Biodiversity Order. However, until such time as the Draft OGMAs are approved, the seral stages for BEC subzones and variants on TFL30 will continue to be managed as per the Provincial Non-Spatial Old Growth Objective.</p> <p>Forests have great potential to sequester and store carbon from the atmosphere. 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>21</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, 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 Canada relies largely on the forest inventory (species and growth rates) and underlying assumptions about 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</p>
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<sup>21</sup> Reference: Carbon Management in British Columbia’s Forests: Opportunities and Challenges. Forrex Series 24. 2009

	<p>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>In the interim, until government has finalized assumptions for carbon budget modeling, Canfor’s carbon strategy will be:</p> <ul style="list-style-type: none"> <li>• Maintain some old growth on the land base for carbon storage.</li> <li>• Prompt reforestation for carbon uptake.</li> <li>• Minimize permanent access structures to maintain forest productivity for carbon uptake.</li> </ul> <p>The licensee will continue to report on the target within this indicator (retention of old forest) as well as related indicators and targets for forest land conversion and reforestation success. Collectively, these indicator statements and targets demonstrate commitment to positively influence carbon balance within the management unit. Retention of old forest (such as Old Growth Management Areas or OGMA’s) throughout the DFA will assist in locking up the carbon already sequestered in these older forests.</p> <p>The licensee 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 least, Canfor will rely upon forest carbon analysis conducted in conjunction with the next Timber Supply Review.</p>
<p>Means of Achieving Objective &amp; Target</p>	<p>The relative amount of late seral stage or old forests have generally been mandated by Higher Level Plans or provincial orders. Where actual percent late seral is less than the legal target in a given ecological unit, harvesting the remaining late seral stands will be avoided. A recruitment strategy will be developed for these ecological units to meet the minimum requirements for late seral stands over time. The Licensee Landscape Objectives Working Group (LLOWG) convenes as required to update the current and future amount of old forest, and the Licensee apportionment (update harvested blocks, newly planned blocks, aging of forest, and Licensee operating area changes). The LLOWG assesses current and anticipated future performances of the licensees in meeting old forest targets and proposed recruitment strategies if targets cannot be met.</p> <p>The “science mean” refers to the mean Natural Range of Variation (NRV) as documented in the “PG TSA Landscape Objective Working Group Background Report” (April 2004)<sup>22</sup>.</p> <p>Contribute positively to carbon uptake and storage by managing the existing amount of designated old forest retention areas either through their protection from harvesting or by replacing area where incursions are necessary with old forests having similar attributes. Details of the replacement strategies are outlined in management plans.</p> <p>The ecological units used for the purpose of reporting at the DFA level are the NDU/Merged Biogeoclimatic Unit combinations listed below.</p> <p>The following strategies will be employed based on the annual results of the LLOWG old growth analysis:</p> <ol style="list-style-type: none"> <li>1. If a large amount of surplus old and interior forest exists within the NDU/BEC (200% surplus or &gt;5000 ha surplus), licensees can proceed with planned and new development with no communication or interaction required with other signatory</li> </ol>

<sup>22</sup>Reference: Background Information and Supporting Documentation for the Process Involved in Developing the Recommended Biodiversity Objectives in the PG TSA. Ministry of Sustainable Resource Management, Northern Interior Region, Prince George. April 2004

- licensees.
2. If a moderate amount of surplus old and interior forest exists within the NDU/BEC (150% surplus or 1000-5000 ha), licensees can proceed with planned and new development with little communication or interaction expected. However, if a large amount of new development is planned prior to the next updating of LOWG data, the licensee will query other licensees in the unit to establish whether the combination of harvest activities will result in a deficit, and determine a means to resolve the deficiency.
  3. If only a small amount of surplus old and interior forest exists within the NDU/BEC (<150% or <1000 ha), licensees may only proceed with planned development (that which has already been included in the most recent LOWG analysis). If a deficiency was forecast due to new harvest planning, the proponent would either resolve the deficiency with other signatory licensees in the unit, or develop and seek approval from the applicable Ministry for a recruitment strategy.
  4. Where a deficiency in old or interior forests exists within the NDU/BEC, licensees will not apply for new cutting permits until the deficiency is resolved, or a recruitment strategy is approved for the unit.

**Current Status,**  
Predicted  
Results or  
Outcome

The percent late seral distribution by ecological unit across the Prince George TSA portion of the DFA is indicated in the following table (2011 baseline data):

Natural Disturbance Unit (NDU)	NDU / Merged BEC	Total CFLB (ha)	Target: Science Mean		Variance: Old Forest Targets from Legal Objective		Current Status (as at March 31/11)	
			%	Hectares	%	Hectares	Current Area (ha)	% of CFLB
Boreal Foothills	A1	7,031	n/a	n/a	33%	2,320	5,484	78%
McGregor	A2	15,782	52%	8,207	26%	4,103	8,557	54%
McGregor	A3	69,757	52%	36,274	12%	8,371	26,082	37%
McGregor	A4	227,723	52%	118,416	26%	59,208	65,920	29%
Moist Interior	A5	14,085	51%	7,183	29%	4,085	3,997	28%
Moist Interior	A6	16,388	51%	8,358	29%	4,752	7,295	45%
Moist Interior	A7	4,268	25%	1,067	17%	726	1,701	40%
Moist Interior	A8	9,306	25%	2,327	12%	1,117	2,696	29%
Moist Interior	A9	34,157	25%	8,539	12%	4,099	5,658	17%
Moist Interior	A10	40,565	25%	10,141	17%	6,896	14,544	36%
Moist Interior	A11	129,857	25%	32,464	12%	15,583	32,533	25%
Moist Interior	A12	161,537	25%	40,384	12%	19,384	39,566	24%
Moist Interior	A13	361,247	25%	90,312	12%	43,350	101,834	28%
Wet	A14	124,797	87%	108,573	50%	62,398	104,841	84%

Mountain								
Wet Mountain	A15	16,375	87%	14,246	84%	13,755	12,024	73%
Wet Mountain	A16	35,545	87%	30,924	26%	9,242	15,361	43%
Wet Mountain	A17	120,107	87%	104,493	50%	60,053	87,041	72%
Wet Trench	A18	2,213	84%	1,859	80%	1,770	1,785	81%
Wet Trench	A19	63,628	84%	53,448	48%	30,542	52,821	83%
Wet Trench	A20	97,571	84%	81,960	80%	78,056	84,874	87%
Wet Trench	A21	116,871	84%	98,172	48%	56,098	70,798	61%
Wet Trench	A22	28,287	80%	22,630	53%	14,992	19,465	69%
Wet Trench	A23	151,965	80%	121,572	53%	80,541	96,892	64%
Wet Trench	A24	135,470	80%	108,376	30%	40,641	39,667	29%
Wet Trench	A25	159,117	80%	127,294	46%	73,194	76,379	48%
<b>Totals</b>		<b>2,143,646</b>				<b>695,276</b>	<b>977,814</b>	

The percent late seral distribution by ecological unit across the TFL30 portion of the DFA is indicated in the following table (2011 baseline data):

Land- scape Unit	NDT	BEC Subzones	Old Forest Stage (years)	Status (%) as at Dec. 31st 2011	Target %	Target Drawn Down by 2/3
Averil	3	SBSwk1, mk1	Old>140	60.8	> 11%	>3.7%
	1	ICHvk2	Old>250	--	> 13%	>4.3%
	1	ESSFwk2	Old>250	30.3	> 19% (2026)	>6.3%
Seebach	2	SBSvk	Old > 250	3.9	> 9%	>3%
	3	SBSwk1	Old > 140	93.2	> 11%	>3.7%
	1	ICHvk2	Old > 250	--	> 13%	>4.3%
	1	ESSFwk2, wc3	Old > 250	<b>5.5</b>	> 19% (2031)	>6.3%
Woodall	2	SBSvk	Old > 250	<b>1.2</b>	> 9%	>3.7%
	1	ICHvk2	Old > 250	8.8	> 13% (2016)	>4.3%
	1	ESSFwk2, wc3	Old > 250	<b>2.1</b>	> 19% (2071)	>6.3%

	<p>Bold numbers indicate a current status below the target.</p> <p>Where Old Forest is below the required targets, it is due to both natural disturbances and harvest history. As the forest ages, the status will trend toward the targets but several decades will pass before the targets are achieved. Where areas are below the target, harvesting will not normally occur until the status is above the targets. Exceptions to this may be made for forest protection activities (beetles, windthrow).</p> <p>As a result of the November 2011 LLOWG analysis, units A4, A5, A15, A18, A24, &amp; A25 are identified as having a deficit of Old Forest. Recruitment strategies have been developed by the LLOWG, and approved by the appropriate Government agency.</p>
<b>Forecast</b>	<p>By implementing the above strategy, it is forecast that the amount of late seral forests across the DFA will be above target at a DFA level (as per Fig 33 of the FIA project 2668007 "SFM Indicator Forecasting and Modeling for the Prince George TSA" report). <i>While the average old forest values for each district meet the targets over the entire planning horizon, some of the individual NDU/BEC units are not able to meet their targets in the midterm. Old growth constraints are significant in the TSA and constrain the timber supply, particularly in the medium term. Once the old pine stands hit by MPB are harvested or break up, in 20 to 30 years, many of the old growth targets are no longer met and harvesting in these units is limited.</i> {excerpt from the Forecasting report} This indicator and the resulting target is a legal requirement at the Landscape Unit level and Canfor strives to meet these targets.</p> <p>It is assumed that this forecast (PG District level) is applicable to the DFA as Canfor is such a large presence in the TSA and PG District in particular.</p> <p>See Appendix 6 for tables forecasting Old Forest for the PG District and TFL30.</p> <p><b>Methods and Assumptions</b> – The forecast is derived from FIA project 2668007 "SFM Indicator Forecasting and Modeling for the Prince George TSA". The methods and assumptions of the forecast are described in detail in this report. The model used for the forecast is Forest Simulation Optimization System (FSOS). <b>FSOS</b> has both simulation and heuristic (pseudo-optimization) capabilities. The time-step simulation mode was used in this analysis. Time-step simulation grows the forest based on growth and yield inputs and harvests resultant polygons based on user-specified harvest rules and constraints that cannot be exceeded. Using "hard" constraints and harvest rules instead of targets (as would be applied in the heuristic mode of <b>FSOS</b>) gives results that are repeatable and more easily interpreted.</p> <p>It is also assumed that this forecast (PG District level) is applicable to the DFA as Canfor is such a large presence in the TSA and PG District specifically.</p>
<b>Target</b>	<p>As per the "Landscape Biodiversity Objectives for the PG TSA" (applicable to operating areas within the PG District); and as per the Provincial Non-Spatial Old Growth Objective (applicable to TFL30). The target is to manage to the science mean with a variance to the minimum of the legal objectives.</p>
Basis for the Target	<p>The following documents were used as a basis for the targets:</p> <ul style="list-style-type: none"> <li>• The Prince George LRMP,</li> <li>• The Prince George TSA Biodiversity Order,</li> <li>• The Provincial Non-spatial Old Growth Order, and</li> <li>• Canfor SFM Commitments and Biodiversity Strategy.</li> </ul>
<b>Monitoring &amp; Measurement</b> Periodic	N/A



Annual	The LLOWG convenes as required to update the current and future amount of old forest, and the Licensee apportionment (update harvested blocks, newly planned blocks, aging of forest, and Licensee operating area changes). The LLOWG assesses current and anticipated future performances of the signatories in meeting old forest targets and proposed recruitment strategies if targets cannot be met.
Variance	As above

**5.7.4 1.1.3 Forest area by seral stage or age class**

<b>Indicator</b>	<b>1.1.3 Forest area by seral stage or age class</b>												
<b>Indicator Statement(s)</b>	1.1.3(b): Maintain a variety of young patch sizes in an attempt to approximate natural disturbance.												
<b>Element(s)</b>	1.1 Ecosystem Diversity 1.3 Genetic Diversity 4.1 Carbon Uptake and Storage												
<b>Value(s) and Objective(s)</b>	<u>Value 1.1:</u> Well-balanced and functioning ecosystems that support natural processes. <u>Objective 1.1.1:</u> Maintain landscapes that support the natural diversity, variety and pattern of ecosystems. <u>Value 1.3:</u> Genetic Diversity. <u>Objective 1.3:</u> Maintain natural genetic diversity within planted crop trees and vegetative material. <u>Value 4.1:</u> Uptake and storage of carbon in forest ecosystems. <u>Objective 4.1:</u> Facilitate carbon uptake and storage within harvested areas.												
<b>Strategies</b> Description	<p>A patch is a forest unit with identifiable boundaries and vegetation different from its surroundings. Often patches are even aged forests established from natural disturbances such as fire, wind or pest outbreaks, or from clearcut harvesting. Patches may be created from a single disturbance event or through a combination of events such as fire and subsequent salvage harvesting. The result of varying disturbance events over time is a landscape of forest stands and patches of different sizes composed of a variety of species, stocking levels and ages. Many natural disturbance events, such as wildfire, have been reduced by forest management practices. In the absence of natural disturbance, timber harvesting is used as a disturbance mechanism and therefore influences the distribution and size of forest patches over much of the DFA. Patch size distribution created by harvesting should emulate the patterns historically created by a natural disturbance regime where patches varied in size and shape.</p> <p>The indicator addresses the pattern of young forest patches distributed across the landscape, where young forests are defined as stands 0 to 20 years of age. In order to remain within the natural range of variability of the landscape and move toward sustainable management of the forest resource, it is important to develop and maintain young patch size targets based on historical natural disturbance patterns. This indicator will monitor the consistency of harvesting patterns compared to the natural patterns of the landscape.</p> <p>The methodology used by the LLOWG to calculate young patch included review of current patch size distribution on maps of each Forest District within the Prince George TSA. Each patch that was 0-20 years old was buffered according to the specifications outlined in the following table. Patches that touched, intersected or overlapped were considered to be one larger patch and buffered according to the combined patch area.</p> <table border="1" data-bbox="532 1608 1305 1812"> <thead> <tr> <th>Patch Size Category</th> <th>Distance Required to Separate Patches</th> </tr> </thead> <tbody> <tr> <td>&lt;50 ha</td> <td>150m</td> </tr> <tr> <td>51 - 100 ha</td> <td>200m</td> </tr> <tr> <td>101 - 500 ha</td> <td>400m</td> </tr> <tr> <td>501 - 1000 ha</td> <td>600m</td> </tr> <tr> <td>&gt;1001 ha</td> <td>800m</td> </tr> </tbody> </table> <p>As harvesting continues, it is anticipated that the distribution of patches will mimic the natural range of patch size distribution. While current trends will move most patch size distributions</p>	Patch Size Category	Distance Required to Separate Patches	<50 ha	150m	51 - 100 ha	200m	101 - 500 ha	400m	501 - 1000 ha	600m	>1001 ha	800m
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	<p>toward targets, others will be further from achieving objectives due to previous harvesting patterns and the effects of the massive infestation of mountain pine beetle.</p> <p>This indicator has a five-year measurement criterion (2005-2010) as established in the PG TSA LLOWG Reporting Protocol. In early 2011, the LOWG will write a rationale for the Wet Mountain unit, in which two out of four patch size categories are trending in the wrong direction. This rationale will be provided to the Prince George District Manager, as the Statutory Decision Maker charged with reviewing the relevant Forest Stewardship Plans.</p>																																																																					
<p>Means of Achieving Objective &amp; Target</p>	<p>The LLOWG has representation from the Ministry of Environment (MOE), the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) and timber licensees. This group aided MOE in the development of landscape biodiversity objectives for patch size distribution for the Prince George TSA, which includes the Prince George DFA. These objectives utilized Natural Disturbance Unit (NDU) research conducted by DeLong (2002). Young forest patch size distribution objectives have been established for each NDU that occurs within the DFA.</p> <p>As already noted, with the recent partition announcement within the PGTSA, impacts to patch size will mainly be a result of natural occurrences (i.e. young patches aging and moving out of the “young” category). Therefore, trends within affected NDU’s may not be influenced by harvesting activities until late in the next reporting period (2010–2015) or quite possibly not until the reporting period after that (2015–2020) when harvesting switches back to primarily green timber.</p> <p>Strategies to trend towards the targets include monitoring the ages of patches so that future harvest design can trend towards the targets. This strategy must take into account other forest values such as forest health, biodiversity, wildlife, etc. Operational constraints such as access and isolating timber must also be considered in this strategy.</p>																																																																					
<p>Current Status, Predicted Results or Outcome</p>	<p>The young forest patch size distribution by NDU across the Prince George TSA portion of the DFA is indicated in the following table (2011 baseline data):</p> <table border="1" data-bbox="410 1066 1435 1845"> <thead> <tr> <th rowspan="2">PATCH SIZE</th> <th colspan="5">Current Status as of March 31st 2010</th> <th rowspan="2">Future Patch Size Trending</th> </tr> <tr> <th>&lt; 50</th> <th>50-100</th> <th>100 - 1000</th> <th>&gt; 1000</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td><b>Moist Interior Plateau Target</b></td> <td><b>5%</b></td> <td><b>5%</b></td> <td><b>20%</b></td> <td><b>70.0%</b></td> <td><b>100%</b></td> <td rowspan="3">Trend towards larger blocks (100 – 1000 ha) in order to reduce the percentage of smaller blocks.</td> </tr> <tr> <td><b>PG (ha)</b></td> <td>11,641.9</td> <td>13,941.3</td> <td>27,615.3</td> <td>140,976.8</td> <td>194,175.3</td> </tr> <tr> <td><b>PG (%)</b></td> <td>6%</td> <td>7.2%</td> <td>14.2%</td> <td>72.6%</td> <td>100.0%</td> </tr> <tr> <td><b>Moist Interior Mtn Target</b></td> <td><b>20%</b></td> <td><b>10%</b></td> <td><b>30%</b></td> <td><b>40%</b></td> <td><b>100%</b></td> <td rowspan="3">Trend towards smaller (&lt;50 ha) or large blocks (&gt;1000 ha) in order to reduce the percentage of larger blocks.</td> </tr> <tr> <td><b>PG (ha)</b></td> <td>590.5</td> <td>1,376.6</td> <td>1,277.6</td> <td>1,301.2</td> <td>4,545.9</td> </tr> <tr> <td><b>PG (%)</b></td> <td>13.0%</td> <td>30.3%</td> <td>28.1%</td> <td>28.6%</td> <td>100.0%</td> </tr> <tr> <td><b>McGregor Plateau Target</b></td> <td><b>10%</b></td> <td><b>5%</b></td> <td><b>45%</b></td> <td><b>40%</b></td> <td><b>100%</b></td> <td rowspan="3">Trend towards the larger blocks (100 – 1000 ha).</td> </tr> <tr> <td><b>PG (ha)</b></td> <td>4,919.1</td> <td>8,902.6</td> <td>15,268.5</td> <td>15,714.2</td> <td>44804.4</td> </tr> <tr> <td><b>PG (%)</b></td> <td>11.0%</td> <td>19.9%</td> <td>34.1%</td> <td>35.1%</td> <td>100%</td> </tr> </tbody> </table>	PATCH SIZE	Current Status as of March 31st 2010					Future Patch Size Trending	< 50	50-100	100 - 1000	> 1000	Total	<b>Moist Interior Plateau Target</b>	<b>5%</b>	<b>5%</b>	<b>20%</b>	<b>70.0%</b>	<b>100%</b>	Trend towards larger blocks (100 – 1000 ha) in order to reduce the percentage of smaller blocks.	<b>PG (ha)</b>	11,641.9	13,941.3	27,615.3	140,976.8	194,175.3	<b>PG (%)</b>	6%	7.2%	14.2%	72.6%	100.0%	<b>Moist Interior Mtn Target</b>	<b>20%</b>	<b>10%</b>	<b>30%</b>	<b>40%</b>	<b>100%</b>	Trend towards smaller (<50 ha) or large blocks (>1000 ha) in order to reduce the percentage of larger blocks.	<b>PG (ha)</b>	590.5	1,376.6	1,277.6	1,301.2	4,545.9	<b>PG (%)</b>	13.0%	30.3%	28.1%	28.6%	100.0%	<b>McGregor Plateau Target</b>	<b>10%</b>	<b>5%</b>	<b>45%</b>	<b>40%</b>	<b>100%</b>	Trend towards the larger blocks (100 – 1000 ha).	<b>PG (ha)</b>	4,919.1	8,902.6	15,268.5	15,714.2	44804.4	<b>PG (%)</b>	11.0%	19.9%	34.1%	35.1%	100%
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<b>PG (ha)</b>	11,641.9	13,941.3	27,615.3	140,976.8	194,175.3																																																																	
<b>PG (%)</b>	6%	7.2%	14.2%	72.6%	100.0%																																																																	
<b>Moist Interior Mtn Target</b>	<b>20%</b>	<b>10%</b>	<b>30%</b>	<b>40%</b>	<b>100%</b>	Trend towards smaller (<50 ha) or large blocks (>1000 ha) in order to reduce the percentage of larger blocks.																																																																
<b>PG (ha)</b>	590.5	1,376.6	1,277.6	1,301.2	4,545.9																																																																	
<b>PG (%)</b>	13.0%	30.3%	28.1%	28.6%	100.0%																																																																	
<b>McGregor Plateau Target</b>	<b>10%</b>	<b>5%</b>	<b>45%</b>	<b>40%</b>	<b>100%</b>	Trend towards the larger blocks (100 – 1000 ha).																																																																
<b>PG (ha)</b>	4,919.1	8,902.6	15,268.5	15,714.2	44804.4																																																																	
<b>PG (%)</b>	11.0%	19.9%	34.1%	35.1%	100%																																																																	

<b>Wet Trench Valley Target</b>	<b>20%</b>	<b>10%</b>	<b>60%</b>	<b>10%</b>	<b>100%</b>	Trend towards the small (<50 ha) and larger blocks (100 – 1000 ha) and away from the largest blocks.
<b>PG (ha)</b>	7,766.0	11,472.3	19,751.0	3,162.6	42,151.9	
<b>PG (%)</b>	18.4%	27.2%	46.9%	7.5%	100%	
<b>Wet Trench Mtn Target</b>	<b>20%</b>	<b>10%</b>	<b>60%</b>	<b>10%</b>	<b>100%</b>	Trend towards the small (<50 ha) and larger blocks (100 – 1000 ha) and away from mid size and the largest blocks.
<b>8463)PG (ha)</b>	2,409.6	4,917.0	5,934.3	2,403.0	15,663.9	
<b>PG (%)</b>	15.4%	31.4%	37.9%	15.3%	100%	
<b>Wet Mtn Target</b>	<b>20%</b>	<b>10%</b>	<b>60%</b>	<b>10%</b>	<b>100%</b>	Trend towards the small (<50 ha), larger (100 – 1000 ha) and largest blocks (>1000 ha) and away from the mid – size (50 – 100 ha) blocks.
<b>PG (ha)</b>	2,832.6	6,928.6	6,998.7	1,294.1	18,054	
<b>PG (%)</b>	15.7%	38.4%	38.8%	7.2%	100%	

The young forest patch size distribution by NDU across the TFL30 portion of the DFA is indicated in the following table (2011 baseline data):

Landscape Unit	Patch Size Category	Patch Size Class (ha)	Target Distribution Range (%)	2004 Status (%)	2006 Status (%)	2011 Status (%)	"Future" (planned blocks + 3 years)	Trend:	Actions:
Averil	Small	<40	10-20	6.5	9.5	11.7	14.2	Achieving	Create more large patches to offset medium - without creating XL patches. Conduct annual analysis to determine re-distribution and to ensure categories trend towards target ranges.
	Medium	40-249	10-20	46.3	56.0	55.3	52.5	Away	
	Large	250-1000	60-80	32.7	26.9	10.0	17.5	Away	
	Extra Large	>1000	0	14.4	7.6	23.1	15.8	Toward	

	Seebach	Small	<40	30-40	4.8	3.8	8.7	20.2	Toward	Create a few more small patches
		Medium	40-79	30-40	17.2	17.2	34.5	42.2	Away	Create more large patches to offset medium - without creating XL patches. Conduct further analysis to determine re-distribution and to ensure categories trend towards target ranges.
		Large	80-250	20-40	29.1	33.4	38.6	30.0	Achieving	
		Extra Large	>250	0	48.9	45.7	18.3	7.5	Toward	
	Woodall	Small	<40	30-40	5.4	13.7	22.7	30.4	Achieving	
		Medium	40-79	30-40	19.6	30.8	61.3	52.0	Away	
		Large	80-250	20-40	29.3	16.2	16.0	17.6	Away	
		Extra Large	>250	0	45.6	39.4	0.0	0.0	Achieving	
<p>It is not the intent to trend towards Young Patch targets in any given year; rather, Young Patch is reported every five years. As harvesting continues, it is anticipated that the distribution of patches in the appropriate size ranges will be achieved. As the table demonstrates, while current trends will take most patch size distributions toward targets, others will actually be further from achieving objectives due to previous harvesting practices and the effects of the current infestation of mountain pine bark beetle.</p>										

<p><b>Forecast</b></p>	<p>This indicator and the resulting targets are a legal requirement. In the most current analysis (delivered 2011) all analysis units in the PG District DFA are trending towards target with the exception of Wet Mountain Natural Disturbance Sub-unit. The current status (2013) of the TFL 30 DFA shows 2/3 LU's trending towards target. By implementing the above strategy, it is forecast that the amount of young patch sizes across the DFA will be as per Appendix 7.</p> <p><b>Methods and Assumptions:</b> The forecast is derived from FIA project 2668007 "SFM Indicator Forecasting and Modeling for the Prince George TSA". The methods and assumptions of the forecast are described in detail in this report. The model used for the forecast is Forest Simulation Optimization System (FSOS). FSOS has both simulation and heuristic (pseudo-optimization) capabilities. The time-step simulation mode was used in this analysis. Time-step simulation grows the forest based on growth and yield inputs and harvests resultant polygons based on user-specified harvest rules and constraints that cannot be exceeded. Using "hard" constraints and harvest rules instead of targets (as would be applied in the heuristic mode of FSOS) gives results that are repeatable and more easily interpreted.</p> <p>It is also assumed that this forecast (PG District level) is applicable to the DFA as Canfor is such a large presence in the TSA and PG District specifically.</p>
<p><b>Target</b></p>	<p>As per the "Landscape Biodiversity Objectives for the PG TSA".</p>
<p>Basis for the Target</p>	<p>Targets are derived directly from the Order Establishing Landscape Objectives for PG TSA (2004), and are based on the NDU research developed by DeLong (2002). Specific factors will limit how effective the licensees will be at trending toward patch size targets. These include historical harvesting patterns that have fragmented portions of the DFA and natural disturbance events such as wildfire and the mountain pine beetle epidemic. Specific attention will have to be made to change current trends for those NDU patch sizes that are trending away from targets due to mountain pine beetle infestations. The LLOWG has committed to providing rationale to MSRM for those units and patch sizes that are not trending toward targets when patch size distribution information is updated.</p> <p>There are some measures that can be taken to achieve patch size distribution targets. Forest health will have to be closely monitored and addressed before it creates excessive patches (either alone or by linking existing cut blocks). This will be particularly challenging in areas of high mountain pine beetle infestation. Future practice will involve connecting small and medium patches to create larger patches in order to trend toward larger patch sizes.</p>
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>This indicator has a DFA/NDU specific target and will be monitored and reported through the LLOWG. Data sources used in the monitoring process include forest cover inventory, NDU maps, adjacent licensee planning and harvest history information, and database data. Forest cover inventory information with updates from licensees based on harvesting activities will be reported according to the PG TSA Landscape Biodiversity Objectives Reporting Protocol to ensure forest management is moving toward patch size targets identified through the LLOWG and this SFMP.</p> <p>This indicator will be reported every five years.</p>
<p>Annual</p>	<p>N/A</p>
<p>Variance</p>	<p>As per the "Landscape Biodiversity Objectives for the PG TSA".</p>

**5.7.5 1.1.4 Degree of within-stand structural retention**

<b>Indicator</b>	<b>1.1.4 Degree of within-stand structural retention</b>
<b>Indicator Statement(s)</b>	1.1.4(a): Percent of stand structure retained across the DFA in harvested areas. 1.1.4(c): Number of non-conformances where forest operations are not consistent with riparian management requirement as identified in operational plans.
<b>Element(s)</b>	1.1 Ecosystem Diversity
<b>Value(s) and Objective(s)</b>	<u>Value 1.1:</u> Well-balanced and functioning ecosystems that support natural processes. <u>Objective 1.1.1:</u> Maintain landscapes that support the natural diversity, variety and pattern of ecosystems.
<b>Strategies</b> Description	<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 the interior of BC (Lindenmayer and Franklin 2002, Bunnell et al. 1999).</p> <p>Wildlife tree retention areas (WTRAs) 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 sites of special biological significance (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 WTRAs can be used with other protected areas such as riparian reserves, old growth areas and provincial parks to provide landscape structure to help keep landscape complexity more consistent with natural disturbance regimes. All of the above values should be considered when considering where to locate (anchor) WTRAs.</p> <p>Operationally, harvest plans often include retention of dispersed trees such as snags, large live trees, deciduous trees, stub trees and understory trees. Dispersed retention provides stand level complexity and long-term recruitment of coarse woody debris. 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.</p> <p>By maintaining WTRAs that are close to their natural distribution, it is expected that landscape level ecological processes such as habitat connectivity and genetic diversity will be maintained within an acceptable proportion of the range of natural variability. This indicator, in conjunction with other landscape level indicators such as seral stage distribution and species composition, will provide important information on ecosystem health.</p> <p>Riparian management areas provide opportunities for connectivity of forested cover along waterways, which are generally areas with high value for wildlife habitat and movement. Operational plans influenced by riparian areas contain site specific commitments that range from 100% protection to 100% removal of merchantable trees, generally with efforts to manage existing understory trees and shrubs.</p>
<b>Means of Achieving Objective &amp; Target</b>	The licensee will achieve targets through the allocation of retention patches during forest development planning. Where applicable, plans will also contain riparian area commitments. Company plans and practices support riparian management. Plans are properly executed providing desired results. Post harvest evaluations assess plan conformance.

<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>1.1.4 (a): The following table displays the baseline landscape level retention levels in the DFA.</p> <table border="1" data-bbox="407 239 1430 491"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> <th>2011/12 Status</th> <th>2012/13 Status</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>13.1%</td> <td>11.2% (two blocks &lt;3.5%)</td> <td>11.9% (one block at 3.2%)</td> <td>16.1%</td> <td>11.2%</td> <td>&gt;7%</td> </tr> <tr> <td>TFL 30</td> <td>7%</td> <td>15.9%</td> <td>N/A*</td> <td>14.1%</td> <td>12.4%</td> <td>&gt;7%</td> </tr> </tbody> </table> <p>* No harvesting during the reporting period.                      Only blocks &gt;15 ha with completed harvesting measured                      Associated total retention includes wildlife tree patches, riparian, and dispersed tree retention</p> <p>1.1.4 c): .Canfor reported three inconsistencies with the implementation of riparian management requirements during the 2011/12 reporting period: two non-conformances during road-building and one non-compliance related to silviculture activities.</p>		2008/09 Status	2009/10 Status	2010/11 Status	2011/12 Status	2012/13 Status	Target	PG	13.1%	11.2% (two blocks <3.5%)	11.9% (one block at 3.2%)	16.1%	11.2%	>7%	TFL 30	7%	15.9%	N/A*	14.1%	12.4%	>7%
	2008/09 Status	2009/10 Status	2010/11 Status	2011/12 Status	2012/13 Status	Target																
PG	13.1%	11.2% (two blocks <3.5%)	11.9% (one block at 3.2%)	16.1%	11.2%	>7%																
TFL 30	7%	15.9%	N/A*	14.1%	12.4%	>7%																
<p><b>Forecast</b></p>	<p>By implementing the above strategy, it is forecast that the percent of stand structure across the DFA will continue to meet the minimum target of 7% across the DFA. Current status described in Table 5 of the Annual Report show that more than the minimum stand structure is being retained across the DFA currently. This forecast trend is expected to continue with the identified strategy.</p>																					
<p><b>Target</b></p>	<p>1.1.4 (a): average of 7% annually for blocks harvested within the DFA, with a minimum of 3.5%.                      1.1.4 (c): 0.</p>																					
<p>Basis for the Target</p>	<p>Recognition that tree retention and riparian areas are “focus areas” for successfully meeting biodiversity and ecosystem objectives. Stand level plan commitments are site specific, consider landscape conditions and may exceed legal requirements.</p>																					
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>N/A</p>																					
<p>Annual</p>	<p>1.1.4 (a): For areas harvested during the annual reporting period, report the (weighted average) stand level retention for all cut blocks &gt; 15ha.                      1.1.4 (c): For areas harvested during the annual reporting period report the number of riparian related non-conformances to plans occurring during the reporting year as compared to the number of cut blocks that were harvested that had riparian management areas within or adjacent to them. Provide descriptions of site-specific incidents and root cause analysis.</p>																					
<p>Variance</p>	<p>1.1.4 (a): 0%.                      1.1.4 (c): 0.</p>																					



*5.7.6 1.2.1 Degree of habitat protection for selected focal species, including species at risk. 1.2.2. Degree of suitable habitat in the long term for selected focal species, including species at risk*

<b>Indicator(s)</b>	<b>1.2.1 Degree of habitat protection for selected focal species, including species at risk</b> <b>1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk</b>
<b>Indicator Statement(s)</b>	1.2.1 - Percent of forest management activities consistent with current Best Management Practices for Species of Management Concern
<b>Element(s)</b>	1.2 Species Diversity 1.3 Genetic Diversity
<b>Value(s) and Objective(s)</b>	<u>Value 1.2:</u> Sustainable populations of flora and fauna native to the DFA. <u>Objective 1.2:</u> Maintain habitat to support flora and fauna native to the DFA. <u>Value 1.3:</u> Genetic Diversity. <u>Objective 1.3:</u> Maintain natural genetic diversity within planted crop trees and vegetative material.
<b>Strategies</b> Description	<p>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 at risk species, this indicator looks at the proper execution of operational plans where those plans contain conservation measures for Species of Management Concern.</p> <p>Maintenance of wildlife habitat over the long-term is critical to meeting the genetic diversity requirements of sustainable forest management. Each of the selected focal species have specific habitat attribute requirements (i.e. snags, closed canopy forests, limited road access, etc.) that need to be maintained for optimal habitat value. Core Indicator 5.2.2 <i>Training in environmental and safety procedures in compliance with company training plans</i> commits the licensees to training personnel on Species of Management Concern and Sites of Special Biological and Cultural Significance.</p> <p>The licensee includes commitments in site/logging plans or other operational plans to manage the habitat of the DFA’s Species of Management Concern. These species will include at risk species and other focal species and are identified in Appendix 3 of this SFM Plan.</p>
<b>Means of Achieving Objective &amp; Target</b>	<p>Government’s policy and legally established framework for the protection of biodiversity values and species at risk under provincial and federal legislation includes the establishment of parks and protected areas, as well as 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>For some of these species, specific habitat conservation targets have been established that identify the amount, distribution and attributes of desirable habitat. For the remaining species, desirable habitat conditions have been identified for each species. Licensees manage spatial information that identifies the broad habitat types and locations for each of the Species of Management Concern. Where applicable, this information is brought forward into operational plans to manage for the desired habitat conditions. Plans are properly executed providing desired results. Post harvest evaluations and other applicable post activity forms (i.e. road construction or site preparation) assess plan conformance.</p>

<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>The following table displays the percent of forest management activities consistent with management strategies (both landscape and stand level) for Species at Risk and/or Species of Management Concern (2011 Baseline data).</p> <table border="1" data-bbox="518 306 1321 499"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>100%</td> <td>100%</td> <td>100%</td> </tr> <tr> <td>TFL30</td> <td>100%</td> <td>100%</td> <td>100%</td> </tr> </tbody> </table> <p>See Appendix 3 for the complete list of Species of Management Concern within the DFA.</p>		2008/09 Status	2009/10 Status	2010/11 Status	PG	100%	100%	100%	TFL30	100%	100%	100%
	2008/09 Status	2009/10 Status	2010/11 Status										
PG	100%	100%	100%										
TFL30	100%	100%	100%										
<p><b>Forecast</b></p>	<p>It is anticipated that short- and long-term supply of desirable habitat for all Species of Management Concern (see Appendix 3) will be maintained on the DFA.</p>												
<p><b>Target</b></p>	<p>100%</p>												
<p>Basis for the Target</p>	<p>Legal obligations, use of best available information and habitat supply modeling done at the provincial/regional level for specific focal species.</p>												
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>N/A</p>												
<p>Annual</p>	<p>For areas where forest activities occurred during the annual reporting period that contained operational plan commitments to manage for a Species of Management Concern, report the number of non-conformances to plans occurring during the reporting year as compared to the total number of areas having operational plan commitments. Include a table to summarize the Species of Management Concern that were identified throughout the year, the management strategies applied and the follow-up actions.</p>												
<p>Variance</p>	<p>0%</p>												

5.7.7 1.2.3 Proportion of regeneration comprised of native species.

1.3.1 Genetic diversity

<b>Indicator(s)</b>	<b>1.2.3 Proportion of regeneration comprised of native species</b> <b>1.3.1 Genetic diversity (not a Core Indicator)</b>																			
<b>Indicator Statement(s)</b>	1.2.3 - Artificial regeneration will be consistent with provincial regulations and standards for seed and vegetative material use.																			
<b>Element(s)</b>	1.2 Species Diversity 1.3 Genetic Diversity																			
<b>Value(s) and Objective(s)</b>	<p><u>Value 1.1:</u> Sustainable populations of flora and fauna native to the DFA.  <u>Objective 1.1:</u> Maintain habitat to support flora and fauna native to the DFA.</p> <p><u>Value 1.3:</u> Genetic Diversity.  <u>Objective 1.3:</u> Maintain natural genetic diversity within planted crop trees and vegetative material.</p>																			
<b>Strategies</b> Description	<p>One of the primary management objectives for sustainability is to conserve the diversity and abundance of native species and their habitats. Silviculture practices that promote regeneration of native species, either through planting or other natural programs, assist in meeting these objectives. The well-being and productivity of future forests are dependent upon the structure and dynamics of their genetic foundation.</p> <p>Tree seed used for growing seedlings to meet reforestation requirements on public lands in BC and Alberta must be registered by the province. The provinces have strict procedures pertaining to the collection, transport, testing, storage and use of registered seed. Tree seed having uniformity of species, source, quality and year of collection are referred to as a seedlot. Administrative seed zones identify which seedlot is ecologically suited for a given area. By choosing a seedlot that was suitable to the site where it was to be planted, the resulting plantation would be adapted to its site, local climate, and endemic forest health problems.</p>																			
Means of Achieving Objective & Target	The licensee’s plans will contain site information and reforestation prescriptions that ensure regeneration will be consistent with provincial regulations and standards. Planted trees will be of acceptable species and originate from seedlots that are ecologically suited to the site. Planting reports will be used to confirm proper execution of plans.																			
<b>Current Status, Predicted Results or Outcome</b>	<p>The following tables show the licensee’s consistency with provincial regulations and standards for seed and vegetative material use (2012 baseline data).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Portion of DFA</th> <th style="text-align: center;">Total Area Planted (ha)</th> <th style="text-align: center;">Area Planted in Accordance with Provincial Regulations and Standards (ha)*</th> <th style="text-align: center;">Total % in DFA**</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">PG</td> <td style="text-align: center;">7,366.3</td> <td style="text-align: center;">7,311.8</td> <td></td> </tr> <tr> <td style="text-align: center;">TFL30</td> <td style="text-align: center;">251.8</td> <td style="text-align: center;">251.8</td> <td></td> </tr> <tr> <td style="text-align: center;"><b>TOTAL</b></td> <td style="text-align: center;"><b>7,618.1</b></td> <td style="text-align: center;"><b>7,563.6</b></td> <td style="text-align: center;"><b>99.3%</b></td> </tr> </tbody> </table> <p>* Measured in terms of number of trees purchased.  ** %=(Area planted in accordance with Chief Forester’s Standards for Seed Use/total area planted) X 100.</p>				Portion of DFA	Total Area Planted (ha)	Area Planted in Accordance with Provincial Regulations and Standards (ha)*	Total % in DFA**	PG	7,366.3	7,311.8		TFL30	251.8	251.8		<b>TOTAL</b>	<b>7,618.1</b>	<b>7,563.6</b>	<b>99.3%</b>
Portion of DFA	Total Area Planted (ha)	Area Planted in Accordance with Provincial Regulations and Standards (ha)*	Total % in DFA**																	
PG	7,366.3	7,311.8																		
TFL30	251.8	251.8																		
<b>TOTAL</b>	<b>7,618.1</b>	<b>7,563.6</b>	<b>99.3%</b>																	

<b>Forecast</b>	By following the “Strategies” and “Means of Achieving Objectives and Targets” sections of this indicator detail sheet, it is anticipated that healthy, productive and genetically diverse forests that are ecologically suited to the site will be maintained.
<b>Target</b>	100%
Basis for the Target	Legal obligations, use of best available information and application of Canfor’s SFM Commitments.
<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	The licensee will report the number of hectares where trees were planted with species and seedlots appropriate to the site as compared to the total number of hectares where planting occurred, and report as a percentage.
Variance	-5%

**5.7.8 1.4.1 Proportion of identified sites with implemented management strategies**

<b>Indicator(s)</b>	<b>1.4.1 Proportion of identified sites with implemented management strategies</b>
<b>Indicator Statement(s)</b>	1.4.1: Percent of forest management activities consistent with management strategies for protected areas and sites of biological significance as contained in operational plans.
<b>Element(s)</b>	1.4 Protected Areas and Sites of Special Biological and Cultural Significance
<b>Value(s) and Objective(s)</b>	<p><u>Value 1.3:</u> Genetic Diversity.</p> <p><u>Objective 1.3:</u> Maintain natural genetic diversity within planted crop trees and vegetative material.</p> <p><u>Value 1.4:</u> Protected areas and sites of special biological and cultural significance.</p> <p><u>Objective 1.4:</u> To maintain representative areas of naturally occurring and important ecosystems, rare physical environments and sites of cultural significance.</p>
<b>Strategies Description</b>	<p>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 at risk species, this indicator looks at the proper execution of operational plans where those plans contain management strategies for sites of biological significance.</p> <p>The licensee participates in higher level and strategic planning that has delineated a series of protected areas (i.e. parks, ecological reserves) and draft old growth management areas within the DFA. This achieved the geographic and ecological goals of provincial Protected Areas Strategies (PAS), providing representation of the cross-section of ecosystems and of old forest attributes. Ecosystems of special biological significance have generally been given a high priority for inclusion in the protected area strategy. Timber harvesting, mining and hydroelectric development are usually 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>At the stand level, protected areas include Wildlife Habitat Areas (retention patches), wildlife tree features (such as a nest tree or mineral lick) and other resource features (such as a permanent sample plot, karst features, or range improvement). Unique areas of biological significance are identified in the field during the planning phase and are managed through avoidance (either by relocating the road and/or harvest area or by protecting it with a wildlife tree patch) or using an appropriate conservation management strategy to sustain local genetic diversity.</p> <p>Core Indicator 5.2.2 <i>Training in environmental and safety procedures in compliance with company training plans</i> commits the licensees to training personnel on Protected Areas and Sites of Special Biological and Cultural Significance.</p> <p>Licensees include commitments in site/logging plans or other operational plans to ensure activities do not compromise these protected areas.</p>
<b>Means of Achieving Objective &amp; Target</b>	<p>Government’s policy and legally established framework for the protection of biodiversity values and species at risk under provincial and federal legislation includes the establishment of parks and protected areas, as well as 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>The licensee manages spatial information that identifies the location of larger scale and stand level protected areas. Where applicable, this information is brought forward into operational plans to ensure roads and harvest activities do not compromise protected areas. Management strategies might include plans for road deactivation or rehabilitation, additional dispersed</p>

	<p>retention or a unique silviculture regime. Operational plans are then properly executed to provide desired results. Post harvest evaluations and other applicable post activity forms (i.e. road construction or site preparation) assess plan conformance.</p> <p>Specific strategies that will be employed to achieve the objective are:</p> <ul style="list-style-type: none"> <li>• Sites of Biological significance <ul style="list-style-type: none"> <li>○ Include training related to the identification and management of sites of biological significance with associated species at risk training provided for employees and contractors who require it.</li> <li>○ Adherence to strategic level plans such as FSP’s (results &amp; strategies) and LRMP’s that may identify local sites of biological significance</li> <li>○ Adherence to FRPA and associated regulations (i.e. UWR’s &amp; WHMA’s)</li> <li>○ Following applicable EMS operational controls</li> <li>○ Developing &amp; implementing best management practices (i.e snags, overstory trees, CWD)</li> <li>○ Harvest avoidance and/or incorporation of unique features within retention areas (i.e ecological reserves, avalanche chutes, mineral licks, denning sites).</li> </ul> </li> <li>• Protected areas <ul style="list-style-type: none"> <li>○ Pre-harvest status checks to ensure no encroachment on legal and draft protected areas or reserves.</li> </ul> </li> </ul> <p>Appropriate strategies are prescribed for development activities in close proximity to protected areas (e.g. no harvest buffers, timing of harvest, road deactivation etc.)</p>		
<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>The following table displays the percent of forest management activities consistent with management strategies for protected areas and sites of biological significance (2012 Baseline data).</p> <table border="1" data-bbox="818 1083 1021 1209" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><b>2011/12 Status</b></td> </tr> <tr> <td style="text-align: center;">100%</td> </tr> </table>	<b>2011/12 Status</b>	100%
<b>2011/12 Status</b>			
100%			
<p><b>Forecast</b></p>	<p>By following the “Strategies” and “Means of Achieving Objectives and Targets” sections of this indicator detail sheet, it is anticipated that short- and long-term supply of desirable habitat for all Species of Management Concern (see Appendix 3) will be maintained.</p>		
<p><b>Target</b></p>	<p>100%</p>		
<p>Basis for the Target</p>	<p>Legal obligations and use of best available information.</p>		
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>N/A</p>		
<p>Annual</p>	<p>For areas where forest activities occurred during the annual reporting period that contained operational plan commitments to manage for sites of biological significance, report the number of non-conformances to plans occurring during the reporting year as compared to the total number areas having operational plan commitments.</p>		
<p>Variance</p>	<p>0%</p>		

**5.7.9 1.4.2 Protection of identified sacred and culturally important sites;**

*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>Indicator</b>	<b>1.4.2 Protection of identified sacred and culturally important sites</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>Indicator Statement(s)</b>	1.4.2 - % of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes.
<b>Element(s)</b>	1.4 Protected Areas and Sites of Special Biological and Cultural Significance 6.2 Respect for Aboriginal Forest Values, Knowledge and Uses
<b>Value(s) and Objective(s)</b>	<u>Value 1.4:</u> Protected areas and sites of special biological and cultural significance. <u>Objective 1.4:</u> To maintain representative areas of naturally occurring and important ecosystems, rare physical environments and sites of cultural significance. <u>Value 6.2.1:</u> Aboriginal Forest Values, Knowledge and Uses. <u>Objective 6.2.1:</u> Incorporation of Aboriginal Forest Values, Knowledge and Uses in Forest Management.
<b>Strategies</b> Description	Meaningful relationships and open communication with local Aboriginal communities help to ensure that areas of cultural importance are managed in a way that retains their traditions and values. This indicator recognizes the importance of managing and protecting culturally important resources and values during forestry operations. Aboriginals, with the benefit of local and traditional knowledge, may provide valuable information concerning the specific location and use of these sites as well as 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 & Target	Efforts have been made to understand which First Nation traditional territories fall within the Plan area and company Defined Forest Areas. Information sharing agreements are made with willing Aboriginal communities to promote the use and protection of sensitive information. Forest management plans are shared with Aboriginal communities. Open communication includes sharing information and enabling forest licensees to understand and incorporate traditional knowledge into forest management options. Licensees are aware of culturally important, sacred and spiritual sites leading to appropriate management or protection by specifying measures in operational plans. Plans are properly executed to provide desired results. Post harvest evaluations and other inspections assess plan conformance. Consultation records are completed for each block and road and there is a record of the Aboriginal(s) involved, the comments received, the level of consultation carried out, and any adjustment to strategies or accommodation made as a result of this consultation. All cut blocks and roads have a Cultural Heritage Resource (CHR) assessment completed and strategies implemented to protect resource features. Operational plans incorporate commitments to manage concerns related to those discussions. Plans are properly executed providing desired results. Post harvest evaluations and other inspections assess plan conformance.

<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>The following table displays the % of identified Aboriginal and non-Aboriginal forest values, knowledge and uses considered in forestry planning processes (2012 Baseline data).</p> <table border="1" data-bbox="818 275 1021 401"> <tr> <td data-bbox="818 275 1021 338"> <p><b>2011/12 Status</b></p> </td> </tr> <tr> <td data-bbox="818 338 1021 401"> <p>100%</p> </td> </tr> </table>	<p><b>2011/12 Status</b></p>	<p>100%</p>
<p><b>2011/12 Status</b></p>			
<p>100%</p>			
<p><b>Forecast</b></p>	<p>Building open and meaningful relationships with local Aboriginals will lead to trust in sharing sensitive information and will allow forest plans to incorporate culturally sensitive sites. These plans will contain information on how these sites will be managed or protected, while respecting the sensitive and often-times confidential nature of the shared information.</p>		
<p><b>Target</b></p>	<p>100% of known forest values, knowledge and uses considered.</p>		
<p>Basis for the Target</p>	<p>Legal obligations, and alignment with Canfor’s SFM Commitments.</p>		
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>N/A</p>		
<p>Annual</p>	<p>Retain a record of the Aboriginal communities whose traditional territory (any part) overlaps with the DFA for the purpose of communication with affected parties. Retain a record of the non-Aboriginals whose cultural heritage resource (any part) overlaps with the DFA for the purpose of communication with affected parties.</p> <p>Retain a record demonstrating that forest management plans within the DFA were shared/discussed with Aboriginal communities.</p> <p>Report:</p> <p>Number of instances where discussions lead to the identification of Aboriginal and non-Aboriginal heritage forest values, knowledge and uses that required specific management or protection.</p> <p>Where the above occurred, report the number of times where operational plans specified how these values were considered.</p> <p>Retain a record of the number of blocks and roads having a consultation record, and the outcome of the consultation.</p> <p>Retain a record of the number of blocks and roads having a CHR assessment completed.</p>		
<p>Variance</p>	<p>0%</p>		



**5.7.10 2.1.1 (a) Reforestation success**

<b>Indicator</b>	<b>2.1.1 Reforestation success</b>
<b>Indicator Statement(s)</b>	2.1.1(a) - The regeneration delay, by area, for stands established annually
<b>Element(s)</b>	2.1 Forest Ecosystem Resilience 4.1 Carbon Uptake and Storage
<b>Value(s) and Objective(s)</b>	<u>Value 2.1:</u> Resilient forest ecosystems. <u>Objective 2.1:</u> Well-balanced ecosystems that support natural processes. <u>Value 4.1:</u> Uptake and storage of carbon in forest ecosystems. <u>Objective 4.1:</u> Facilitate carbon uptake and storage within harvested areas.
<b>Strategies</b> Description	<p>Prompt reforestation of harvested areas is a major component of sustainable forest management. Ensuring that 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 the forest land base to grow trees is maintained. Forests in Canada are classified according to an Ecosystem Classification System, which identifies the tree species that are most suited ecologically for regeneration in any particular site. Promptness also aids in providing young trees a head start against competing vegetation, helping to reduce the need for manual or chemical brushing treatments.</p> <p>Prompt reforestation also lends itself to long term forest health and productive forests that uptake and store carbon. Young plantations are typically healthy and rapidly growing so they sequester more CO<sub>2</sub> through photosynthesis than they release through decay. By reducing atmospheric greenhouse gases such as CO<sub>2</sub>, regenerating cut blocks can contribute to reducing climate change. The sooner cut blocks are regenerated after completion of harvest the sooner this process can begin. Sub-surface drainages and the high mica content of some district soils make them especially prone to slippage. Early reforestation can slow or halt this process.</p> <p>In the interim, until government has finalized assumptions for carbon budget modeling, Canfor’s carbon strategy will be:</p> <ul style="list-style-type: none"> <li>• To maintain some old growth on the land base for carbon storage,</li> <li>• To ensure prompt reforestation for carbon uptake, and</li> <li>• To minimize permanent access structures in order to maintain forest productivity for carbon uptake.</li> </ul> <p>Canfor will continue to report on the target within this indicator (average regeneration delay for stands established annually) as well as related indicators and targets for forest land conversion and retention of old forest. Collectively, these indicator statements and targets demonstrate commitment to positively influence carbon balance within the management unit.</p> <p>Canfor 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, Canfor will rely upon forest carbon analysis conducted in conjunction with the next Timber Supply Review.</p>
<b>Means of Achieving Objective &amp; Target</b>	The Licensee is legally required to declare the Net Area to be Reforested (NAR) of a cut block regenerated by a date specified in the Site Plan. The NAR is the area of a cut block that must be reforested, and does not include permanent access structures, wildlife tree patches, and natural non-productive area (i.e. rock, wetlands). Participating licensees will also specify in Site Plans tree species that are ecologically suited to the site. Silviculture treatment regimes and forward plans schedule activities consistent with established key dates contained within plans.

<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>The following table summarizes licensee performance to date specific to regeneration delay (2012 Baseline data).</p> <table border="1" data-bbox="818 275 1021 401"> <tr> <td data-bbox="818 275 1021 338"> <p><b>2011/12 Status</b></p> </td> </tr> <tr> <td data-bbox="818 338 1021 401"> <p>99%</p> </td> </tr> </table>	<p><b>2011/12 Status</b></p>	<p>99%</p>
<p><b>2011/12 Status</b></p>			
<p>99%</p>			
<p><b>Forecast</b></p>	<p>It is anticipated that prompt reforestation will ensure that:</p> <ul style="list-style-type: none"> <li>• the productive capacity of forest land base to grow trees is maintained.</li> <li>• Actively growing, healthy forests will best contribute to carbon uptake and storage. Healthy ecosystems with a diversity of native broadleaf and coniferous species will be maintained at endemic and sustainable levels, and</li> <li>• Forests that uptake carbon will positively contribute to a reduction in carbon emissions.</li> </ul>		
<p><b>Target</b></p>	<p>100% of Net Area Reforested (NAR) regenerated within 3 years (artificial) and 6 years (natural) from harvest commencement.</p>		
<p>Basis for the Target</p>	<p>This target promotes prompt reforestation and meets or exceeds legal requirements outlined in legislation. Early establishment of a viable crop of trees reduces the need for subsequent interventions (i.e. planting, brushing) and positively contributes to carbon sequestration.</p>		
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>Periodic monitoring will require tracking harvesting commencement dates for blocks as well as the date that regeneration delay was declared. Tracking of this data will allow for yearly reporting of the area weighted average regeneration delay for all blocks reforested within a given reporting period.</p>		
<p>Annual</p>	<p>Annually report the average time (weighted by area) for regeneration establishment on areas where regeneration delay was declared during the reporting period. For the purposes of this indicator, commencement of the regeneration delay period is based on the harvesting commencement date.</p>		
<p>Variance</p>	<p>0%</p>		

*5.7.11 2.1.1 (b) Reforestation success*

<b>Indicator</b>	<b>2.1.1 Reforestation success</b>
<b>Indicator Statement(s)</b>	2.1.1(b) - The % of block area that meets free growing requirements as identified in site plans
<b>Element(s)</b>	2.1 Forest Ecosystem Resilience 4.1 Carbon Uptake and Storage
<b>Value(s) and Objective(s)</b>	<u>Value 2.1:</u> Resilient forest ecosystems. <u>Objective 2.1:</u> Well-balanced ecosystems that support natural processes. <u>Value 4.1:</u> Uptake and storage of carbon in forest ecosystems. <u>Objective 4.1:</u> Facilitate carbon uptake and storage within harvested areas.
<b>Strategies</b> Description	<p>A free growing stand is a stand of healthy trees of a commercially valuable species, the growth of which is not impeded by competition from plants, shrubs or other trees (BC MOF 1995b). A free growing assessment is conducted on Standards Units based on a time frame indicated in the Site Plan. A Standards Unit (SU) is defined in the Stocking and Free Growing Survey Procedures Manual (BC MOF 2002) as:</p> <p><i>"An area that is managed through the uniform application of a silvicultural system, stocking standards, and soil conservation standards. These standards are used to determine if legal regeneration, free growing, and soil conservation obligations are met."</i></p> <p>Free growing dates are established based on the biogeoclimatic ecosystem classification of the site and the tree species prescribed for planting after harvest.</p> <p>In order to fulfil mandates outlined in legislation, standards are set for establishing a crop of trees that will encourage maximum productivity of the forest resource (BC MOF 1995b). The free growing survey assesses the fulfilment of a Licensee's obligation to the Crown for reforestation.</p> <p>This indicator measures the percentage of harvested blocks that annually meet free growing obligations across the DFA. While this percentage is important in a legal sense, as the licensee has an obligation to meet free growing standards, it is also important for sustainable forest management. Standard units that meet free growing standards are deemed to have reached a stage where their continued presence and development is more assured. They are in numbers, health and height that make them less vulnerable to competition and more likely to reach maturity. Producing a free to grow stand means that the forest ecosystem will continue to develop. It means that carbon sequestration will also continue, locking up additional greenhouse gases as cellulose in the growing plantation. As more blocks reach free to grow status, they could make a significant local contribution to reducing global climate change.</p> <p>In the interim, until government has finalized assumptions for carbon budget modelling, Canfor's carbon strategy will be:</p> <ul style="list-style-type: none"> <li>• To maintain some old growth on the land base for carbon storage,</li> <li>• To ensure prompt reforestation for carbon uptake, and</li> <li>• To minimize permanent access structures in order to maintain forest productivity for carbon uptake.</li> </ul> <p>Canfor will continue to report on the target within this indicator (existing areas of non-forested types artificially converted to forested types) as well as related indicators and targets for regeneration delay, additions and deletions to the forest area and retention of old forest. Collectively, these indicator statements and targets demonstrate commitment to positively influence carbon balance within the management unit.</p> <p>Canfor will continue to monitor developments in carbon sequestration modeling both at the</p>

	provincial and regional level and will utilize this information within the SFM Plan. At the very least, Canfor will rely upon forest carbon analysis conducted in conjunction with the next Timber Supply Review.												
Means of Achieving Objective & Target	<p>Free growing dates and standards for each block are recorded and maintained in Canfor’s database. Each cut block is surveyed prior to the free growing date to ensure the free growing standards have been met and that the stand of trees is at target heights, fully stocked, and healthy. The results of all surveys are summarized and maintained in the licensee’s database. If a survey indicates that the block has not achieved free growing by the required date, corrective actions will be prescribed immediately in order to remedy the situation while still meeting the free growing deadlines. If all free growing standards are met, the Licensee will make an application to the Ministry of Forests, Land and Natural Resource Operations for the block to revert to the Crown's responsibility.</p> <p>It is the licensee’s responsibility to monitor, track and report this indicator. Opportunities for continuous improvement could be found in the administration of silviculture activities. Currently, failure to meet free to grow objectives generally relates to database tracking, survey methodology and reporting delays. These issues will be reviewed and, if necessary, a resulting action plan will be developed and implemented to minimize future negative impacts to this indicator.</p>												
Current Status, Predicted Results or Outcome	<p>The following table identifies the percent of block area that meets free growing requirements as identified in site plans.</p> <table border="1" data-bbox="516 886 1321 1081"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>100%</td> <td>100%</td> <td>100%</td> </tr> <tr> <td>TFL30</td> <td>100%</td> <td>100%</td> <td>100%</td> </tr> </tbody> </table>		2008/09 Status	2009/10 Status	2010/11 Status	PG	100%	100%	100%	TFL30	100%	100%	100%
	2008/09 Status	2009/10 Status	2010/11 Status										
PG	100%	100%	100%										
TFL30	100%	100%	100%										
Forecast	<p>Failure to meet the prescribed requirements on or before their free growing dates could put the sustainability of the timber resource within the DFA in peril. Free growing stands are considered to have reached a state where they can continue to grow in a healthy manner, reasonably free of competition. Stands that have not reached this state may be suffering high pest mortality or competition from other species that may prevent them from becoming commercially viable crop trees.</p> <p>In addition to economic benefits, free growing stands contribute to ecological values of SFM. Achievement of free growing stands ensures that the nutrients and productivity of the site have not been significantly altered from harvest and that the land area has not been converted to another type of vegetative cover. Wildlife species dependent on healthy forests also benefit from the creation of free growing stands. A free growing stand also represents an area that is actively storing carbon and contributing to the removal of carbon dioxide from the atmosphere. Having 100% of blocks meet their free growing date means that the DFA may potentially make a significant contribution to the effort to reduce atmospheric carbon dioxide.</p> <p>In the long-term, failing to achieve the identified target for this measure could negatively impact economic, ecological and social values across the DFA. If the timber supply and the amount of healthy regenerating forests decline, the industries, communities and natural processes that depend on them may also suffer. In the Prince George DFA, trends for the immediate future will likely show that 100% of blocks will meet the prescribed free growing requirements as identified in site plans.</p>												
Target	100%												
Basis for the	The target for this indicator has been established at 100% to ensure that all blocks within the												

Target	DFA achieve free to grow status within prescribed timelines. Once blocks reach the free to grow standard, the area reverts back to Crown land and all Licensee obligations are considered complete. A performance target of 100% is not only achievable, it is in the Licensee's best interest as the completion of silviculture obligations is an important financial benefit. Until the Crown assumes responsibility for a plantation, the Licensee must bear the costs of managing that stand, including surveys, thinning, brushing, and, if necessary, replanting. Future practice will involve the licensee continuing to meet free to grow obligations and this data will be reported out to the public annually.
<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	This indicator has a Licensee specific target and will be managed on an individual basis. Silviculture obligations such as free growing dates for blocks are recorded and maintained in the Licensee's database. Once free growing status has been achieved, the Licensee must submit a report to the Ministry of Forests, Lands and Natural Resource Operations that will update the status of the blocks on the government database.
Variance	0%.

*5.7.12 2.2.1 Additions and deletions to the forest area*

<b>Indicator</b>	<b>2.2.1 Additions and deletions to the forest area</b>
<b>Indicator Statement(s)</b>	2.2.1(a) - The % of gross land base in the DFA converted to non-forested land use through forest management activities.
<b>Element(s)</b>	2.2 Forest Ecosystem Productivity 4.1 Carbon Uptake and Storage 4.2 Forest Land Conversion
<b>Value(s) and Objective(s)</b>	<p><u>Value 2.2:</u> Productive ecosystems.</p> <p><u>Objective 2.2:</u> Maintain ecosystems that are capable of supporting naturally occurring species</p> <p><u>Value 4.1:</u> Uptake and storage of carbon in forest ecosystems.</p> <p><u>Objective 4.1:</u> Facilitate carbon uptake and storage within harvested areas.</p> <p><u>Value 4.2:</u> Forest land.</p> <p><u>Objective 4.2:</u> Minimize the conversion of forest land to non-forest land.</p>
<b>Strategies Description</b>	<p>Given the Crown forest land ownership and associated forest tenure situation in Canada forest companies generally have little influence over additions to or deletions from 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 permanent access structures within the DFA. A permanent access structure is defined as a structure, including roads, bridges, landings, gravel pits or other similar structures that provides access for timber harvesting. The amount of area permanently lost to permanent access structures varies depending on the harvest system, season of harvest, topography and road building standards. Unless rehabilitated, these access structures occupy otherwise productive land suitable for forest establishment, resulting in reductions to the gross land base over time and productive area suitable for the growth of trees. The target for this indicator is focused on those activities where forest companies have direct control (i.e. excludes other permanent losses resulting from other industries sharing the overall forest estate). Actual reporting against the specified targets is anticipated to increase over time until the road infrastructure in the timber harvesting land base is fully developed. As such a periodic review of the associated targets will be necessary over time.</p> <p>As an interim strategy, until government has finalized assumptions for carbon budget modeling, Canfor’s carbon strategy will be:</p> <ul style="list-style-type: none"> <li>• To maintain some old growth on the land base for carbon storage,</li> <li>• To ensure the prompt reforestation for carbon uptake, and</li> <li>• To minimize permanent access structures in order to maintain forest productivity for carbon uptake.</li> </ul> <p>Canfor will continue to report on the target within this indicator (percent of gross land base in the DFA converted to non-forest land use through forest management activities) as well as related indicators and targets for regeneration delay and retention of old forest. Collectively, these indicator statements and targets demonstrate commitment to positively influence carbon balance within the management unit.</p> <p>Canfor 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 least, Canfor will rely upon forest carbon analysis conducted in conjunction with the next Timber Supply Review.</p>
<b>Means of</b>	Reductions to the gross land base due to permanent access structures resulting from forest

<p><b>Achieving Objective &amp; Target</b></p>	<p>management activities can be minimized by:</p> <ul style="list-style-type: none"> <li>• Careful total chance access planning to minimize the amount of permanent access structures;</li> <li>• Using proper road construction, maintenance, deactivation and rehabilitation procedures;</li> <li>• Minimizing the degraded width of roads necessary to safely extract timber from an area;</li> <li>• Specifying performance measures in operational plans which include proposed and maximum permanent access area and percent as well as degraded road widths;</li> <li>• Conducting pre-works to communicate road construction expectations and allowable levels of permanent access structures specified in operational plans; and</li> <li>• Conducting harvesting inspections to assess consistency with specifications outlined in preworks and operational plans.</li> </ul> <p>Proposed reductions to the gross land base resulting from permanent access structures are calculated and included in operational plans (site plans and/or logging plans). Plans are executed providing desired results. Post harvest evaluations and other inspections assess plan conformance with the desired results.</p>									
<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>The following table identifies the percentage of gross land base in the DFA converted to non-forest land use through forest management activities (2013 baseline data).</p> <table border="1" data-bbox="407 856 1336 995"> <thead> <tr> <th>Gross Area = 1,510,738 ha</th> <th>Current Status</th> <th>Forecasted Future Status<sup>1</sup></th> </tr> </thead> <tbody> <tr> <td>Ha</td> <td>33,802</td> <td>43,802</td> </tr> <tr> <td>Percent of Gross Area</td> <td>2.2%</td> <td>2.9%</td> </tr> </tbody> </table> <p>The Gross Area includes Canfor’s operating areas, ecological reserves, parks and protected areas but excludes lakes and rivers.</p> <p><sup>1</sup> Future Status is based on historic road construction of approximately 500 ha of roads per year, over a period of 20 years.</p>	Gross Area = 1,510,738 ha	Current Status	Forecasted Future Status <sup>1</sup>	Ha	33,802	43,802	Percent of Gross Area	2.2%	2.9%
Gross Area = 1,510,738 ha	Current Status	Forecasted Future Status <sup>1</sup>								
Ha	33,802	43,802								
Percent of Gross Area	2.2%	2.9%								
<p><b>Forecast</b></p>	<p>Productive forest soils with minimized losses in forest productivity and the forest productive area resulting from the construction and maintenance of permanent access structures. Permanent access structure area (percent non-productive unnatural) is utilized in the provincial Timber Supply Review.</p>									
<p><b>Target</b></p>	<p>&lt;3% of gross land base in the DFA</p>									
<p><b>Basis for the Target</b></p>	<p>Focused on removal of productive forest land base where forest managers have direct management responsibility. Provides an overall DFA performance measure by the licensee, evaluating land base lost within harvest areas as well as that area lost to access those harvest areas. Inclusive of forests that are not part of the THLB.</p> <p>The licensee specific target for this indicator were calculated by determining the area of roads required to be constructed in a reporting period relative to the total area harvested during the same reporting period. The result is the percentage of road area needed to be constructed to harvest a given area of timber. Weighted averages were then used to assess this percentage over multiple reporting periods and arrive at licensee specific weighted averages that form the basis of the targets for this indicator. The assumption is that this methodology for establishment of the targets provides a basis for correlating the percentage of area in permanent access structures needed to harvest a given area of timber. Over time, it is expected that the percentage of the gross land base that is converted to permanent access structures will decrease as the road infrastructure in the DFA becomes fully developed. As such, periodic evaluation of the targets over time will be necessary to ensure that targets are still meaningful.</p>									

<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	Permanent access structures as a percent are utilized in provincial Timber Supply Review forecasts. Report percent converted from operational information that tracks area in permanent roads, landings, borrow pits, rock quarries and permanent camps. Deduct any included areas that have been rehabilitated during the reporting period. Report the amount of conversion of the THLB along with the Gross.
Variance	0%



*5.7.13 2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested*

<b>Indicator</b>	<b>2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested</b>
<b>Indicator Statement(s)</b>	2.2.2 - Percent of volume harvested compared to allocated harvest level
<b>Element(s)</b>	2.2 Forest Ecosystem Productivity 5.1 Timber and Non-Timber Benefits
<b>Value(s) and Objective(s)</b>	Value 2.2: Productive ecosystems. <u>Objective 2.2:</u> Maintain ecosystems that are capable of supporting naturally occurring species. Value 5.1: Short and long-term benefits. <u>Objective 5.1.1:</u> Maintaining a flow of timber benefits.
<b>Strategies</b> Description	<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 many locations, it also requires an understanding of the nature of the transition of forests from harvesting old growth to harvesting second growth. 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 climate and the kinds and intensities of management inputs (e.g., silvicultural treatments).</p> <p>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><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 (BC) or authorized by the Ministry of Sustainable Resource Development (Alberta). The harvest level is set only after considering social, economic and biological criteria. In BC, 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>. Support for local communities through business relationships provides employment diversification and increased local revenue.</p> <p>Timber supply is usually considered within the context of three relative timeframes — short-term, medium-term and long-term. The short-term is typically represented by the first two decades of the harvest forecast and reflects the period in which the scheduled harvest level is defined by immediate concerns of achieving socio-economic objectives and maintaining non-timber values. The medium-term corresponds to the transition from harvesting mostly old growth to harvesting managed stands. The long-term is the period that begins approximately when the harvest reaches the long term harvest level.</p> <p>Guidance in developing harvest flow objectives is taken from the current economic and social objectives of the Crown. In the short-term, there is often a desire by government to retain the continued availability of good forest jobs and the long-term stability of communities that rely on forests. At the same time, harvest levels in the short-term must not compromise long-term sustainability.</p> <p>In general, a reasonable flow pattern provides for a managed and gradual transition from</p>

	<p>short-term to medium- and long-term harvest levels, and avoids large and abrupt disruptions in timber supply. A reasonable flow has a medium-term level that drops below the long-term level to the minimum extent and only if justified. The long-term level should provide an even level of growing stock over the long-term.</p> <p>Initial harvest levels are used by government decision makers in determining the allowable annual cut (AAC). The harvest level is set using a rigorous process that considers social, economic and biological criteria.</p>
<p>Means of Achieving Objective &amp; Target</p>	<p>The licensee contributes to the sustainable harvest level by managing to the determined harvest level for the management unit or in some cases by adhering to their apportioned harvest volume within the TSA. Cut control regulations dictate the short-term harvest flexibility. Essentially, licensees have flexibility on harvest levels from year to year but must balance every five years or less if desired by the licensee.</p> <p>Currently, Canfor's two replaceable Forest Licenses in the DFA are also applicable to the Vanderhoof and Fort St. James DFAs. Including TFL30, Canfor's AAC apportionment in the Prince George DFA is approximately 1,307,840 m<sup>3</sup>. The five year cut control period for Forest License A40873 is 2012-2016. The five year cut control period for Forest License A18165 is 2010-2014. This volume is harvested on Canfor's DFA.</p>
<p><b>Current Status, Predicted Results or Outcome</b></p>	<p><i>BC data from most current AAC rationale</i> <a href="http://www.for.gov.bc.ca/hts/tsas.htm">http://www.for.gov.bc.ca/hts/tsas.htm</a></p> <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 timber supply forecasts which then rely on the Chief Forester to provide a determination of harvest levels utilizing forecast information, Crown objectives and input from the public.</p> <p>The latest timber supply review for the Prince George TSA (in which this DFA is contained) was determined on January 11<sup>th</sup>, 2011. The review indicated the new AAC for the Prince George TSA is 12.5 million cubic metres, including the following partitions:</p> <ul style="list-style-type: none"> <li>• a maximum of 3.5 million cubic metres attributable to non-pine species, and non-cedar and non-deciduous leading stands;</li> <li>• a maximum of 23,000 cubic metres attributable to cedar-leading stands; and</li> <li>• a maximum of 160,000 cubic metres attributable to deciduous-leading stands in the Prince George and Fort St. James Forest Districts.</li> </ul> <p>In addition to these partitions, it is expected that a maximum of 875,000 cubic metres per year come from spruce-leading stands.</p> <p>This AAC will remain in effect until a new AAC is determined, which may take place within 10 years of this determination unless postponed in accordance with Section 8(3.1) of the <i>Forest Act</i>.</p> <p>More information on the timber supply review can be found at: <a href="http://www.for.gov.bc.ca/hts/tsa/tsa24/">http://www.for.gov.bc.ca/hts/tsa/tsa24/</a></p> <p>The following graph shows the percentage volume for both PG TSA and TFL 30 that has been harvested from 2007 to 2011 and the percentage volume that is planned to be harvested in 2012 and 2013 compared to the AAC volume that was harvested has generally been within 50% of the AAC apportionment.</p>

	<p style="text-align: center;"><b>Yearly Current and Forecast Volume Compared to Target and Variance</b> (2013 based on Harvest Billing System data rather than cut control letters)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>2007</td> <td>2008</td> <td>2009</td> <td>2010</td> <td>2011</td> <td>2012</td> <td>2013</td> <td>2014</td> <td>2015</td> </tr> <tr> <td>Canfor Pct of target</td> <td>85.5%</td> <td>70.2%</td> <td>67.8%</td> <td>70.0%</td> <td>69.6%</td> <td>100.0%</td> <td>100.0%</td> <td>100.0%</td> <td>100.0%</td> </tr> </table> <p>The monitoring results from the above graph will be used as baseline data for the percent of volume allocated compared to the actual harvest level.</p>		2007	2008	2009	2010	2011	2012	2013	2014	2015	Canfor Pct of target	85.5%	70.2%	67.8%	70.0%	69.6%	100.0%	100.0%	100.0%	100.0%
	2007	2008	2009	2010	2011	2012	2013	2014	2015												
Canfor Pct of target	85.5%	70.2%	67.8%	70.0%	69.6%	100.0%	100.0%	100.0%	100.0%												
<b>Forecast</b>	It is anticipated that the forecast of future harvesting will be within the target range.																				
<b>Target</b>	100% over 5 years.																				
Basis for the Target	Legal requirements.																				
<b>Monitoring &amp; Measurement</b> Periodic	The schedule for subsequent Timber Supply Reviews for the Prince George TSA 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	Report the harvest level allocated for each license for the cut control period and the harvest level cut at the end of the period.																				
5 year	N/A																				
Variance	+10%																				

**5.7.14 3.1.1. Level of soil disturbance**

<b>Indicator</b>	<b>3.1.1 Level of soil disturbance</b>
<b>Indicator Statement(s)</b>	3.1.1 - Percent of harvested blocks meeting soil disturbance objectives identified in plans
<b>Element(s)</b>	3.1 Soil Quality and Quantity
<b>Value(s) and Objective(s)</b>	<u>Value 3.1:</u> Soil conservation <u>Objective 3.1:</u> The productive capacity of forest soils within the Timber Harvesting Land Base (THLB) is sustained.
<b>Strategies Description</b>	<p>The objectives of soil conservation under British Columbia’s Forest and Range Practices Act (FRPA) includes:</p> <ul style="list-style-type: none"> <li>• Limiting the extent of soil disturbance caused by harvesting and silviculture activities that negatively affect the physical, chemical and biological properties of soil; and</li> <li>• Conducting forest practices in a manner that addresses the inherent sensitivity of a site to soil degrading processes to minimize soil disturbance, landslides, soil erosion and sediment delivery to streams.</li> </ul> <p>The objective of placing limits on the amount of soil disturbance allowed within the “Net Area to be Reforested” (NAR) is to ensure that site productivity is maintained and that impacts to other resource values are prevented or mitigated. Net Area to be Reforested (NAR) is defined as the area which the licensees are legally obligated to regenerate to free growing status (i.e. gross harvest area minus deletions for roads, landing, gravel pit, wildlife tree patches, etc.). Harvesting and silviculture activities must be carried out such that the total amount of soil disturbance at any time during operations does not exceed the specified maximum (BCMOF 2001). Objectives set by the provincial government for soils, as well as associated practice requirements specific to soil disturbance limits, are outlined in the Forest Planning and Practices Regulation (FPPR).</p> <p>Soil Disturbance types and related categories is a general term and can include temporary access structures, corduroyed trails, compacted areas and dispersed disturbance (dispersed trails, gouges, and scalps). 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 harvesting and silviculture operations.</p>
<b>Means of Achieving Objective &amp; Target</b>	<p>Prior to harvest commencement, field data is collected to assess slopes, soil textures, soil moisture regimes, movement through soils and organic matter content for soils within a block. This information is then used for the identification and delineation of allowable levels of soil disturbance within the block net area to reforest for harvesting and silviculture activities. Soil disturbance objectives are written into plans by committing to the maximum planned levels of soil disturbance for standard units and roadside work areas. Harvest operations are conducted in a way, and during times of the year, that ensures commitments can be achieved. Post harvest evaluations and other inspections assess compliance with soil disturbance limits identified in plans.</p>

<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>The following table shows the status for the percent of harvested blocks meeting legal soil disturbance objectives.</p> <table border="1" data-bbox="516 275 1321 468"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>100%</td> <td>100%</td> <td>100%</td> </tr> <tr> <td>TFL30</td> <td>100%</td> <td>100%</td> <td>100%</td> </tr> </tbody> </table>		2008/09 Status	2009/10 Status	2010/11 Status	PG	100%	100%	100%	TFL30	100%	100%	100%
	2008/09 Status	2009/10 Status	2010/11 Status										
PG	100%	100%	100%										
TFL30	100%	100%	100%										
<p><b>Forecast</b></p>	<p>By following the “Strategies” and “Means of Achieving Objectives and Targets” sections of this indicator detail sheet, it is anticipated that productive forest soils with minimized losses from forest operations will be maintained.</p>												
<p><b>Target</b></p>	<p>100% of blocks meet soil disturbance objectives.</p>												
<p>Basis for the Target</p>	<p>Maintenance of site productivity is a core prerequisite for achieving sustainability. Managing the area of detrimental soil disturbance will help to retain the productive capacity of the land base.</p>												
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>The harvesting and/or silviculture supervisor in conjunction with the contractor will monitor and measure soil disturbance levels during active operations. When levels of soil disturbance are approaching limits specified in preworks and associated operational controls, the contractor is to suspend operations in the area and contact their licensee supervisor.</p>												
<p>Annual</p>	<p>Reporting based on harvest inspections and/or government inspections. Any non-conformance or non-compliance to plans will be identified and used as the basis for reporting. Report the area (hectares) of cut blocks where soil disturbance commitments were achieved as compared to the total area of cut blocks that were harvested during the reporting year (reporting on net area requiring reforestation). The annual report will provide a description of any corrective actions where this indicator falls below the target.</p>												
<p>Variance</p>	<p>0%.</p>												

**5.7.15 3.1.2 Level of downed woody debris**

<b>Indicator</b>	<b>3.1.2 Level of downed woody debris</b>
<b>Indicator Statement(s)</b>	3.1.2 - Percent of cut blocks where post harvest CWD levels are within the targets contained in Plans.
<b>Element(s)</b>	3.1 Soil Quality and Quantity
<b>Value(s) and Objective(s)</b>	<u>Value 3.1:</u> Soil conservation <u>Objective 3.1:</u> The productive capacity of forest soils with the Timber Harvesting Land Base (THLB) is sustained.
<b>Strategies</b> Description	<p>This indicator and target addresses the need to manage for Coarse Woody Debris (CWD) given its importance as a stand attribute and component of stand-level biodiversity. Coarse Woody Debris typically includes sound or rotting logs, stumps, or large branches that have been fallen or been cut and left in the woods, or trees and branches that have died but remain standing or leaning. For operational purposes, CWD is defined as material greater than 10cm in diameter, in all stages of decay. Coarse Woody Debris plays numerous functional roles in natural and managed forests and aquatic ecosystems including: providing feeding, breeding and shelter substrate for many organisms; providing habitat for many forest plants, animals and microorganisms; providing a nutrient source and growing substrate for various bacteria and fungi; carbon storage; erosion control; microclimates for seedling establishment; shelter and access routes for small mammals; and influencing slope and stream geomorphology. Guiding principles related to CWD management include: minimizing CWD accumulations on landings and roadside; larger pieces are more valuable than smaller pieces; ecologically, it is advantageous to maintain the full range of decay and diameter classes of CWD; coniferous material lasts many times longer than deciduous material; CWD can be managed in conjunction with wildlife trees and other constrained or reserve areas; manage the composition and arrangement of CWD within acceptable levels of risk of wildfire, insect pest and forest disease outbreaks; and harmonize the retention of CWD with silviculture objectives. This indicator is complimented by Indicator 1.1.4: Degree of within-stand structural retention.</p> <p>Potential sources of CWD in managed stands can include the following:</p> <ul style="list-style-type: none"> <li>• Logs already lying on the forest floor that are left after harvesting;</li> <li>• Uneconomical wood resulting from harvest operations including breakage, short pieces and tops;</li> <li>• Long-term CWD recruitment may be addressed by leaving reserves and wildlife trees, possibly including cull trees;</li> <li>• Dispersed wildlife trees including green trees, stubbed trees and standing dead trees; and</li> <li>• Retention of standing trees below utilization standards (poles and bigger) as a long-term CWD recruitment source</li> </ul> <p>Canfor Best Management Practices (BMP's) for CWD include:</p> <ul style="list-style-type: none"> <li>• To retain standing deciduous trees where operationally feasible; otherwise, left where felled;             <ul style="list-style-type: none"> <li>○ Same for Douglas-fir, especially vets;</li> </ul> </li> <li>• To leave non-merchantable stems and under-utilization stems on the block;</li> <li>• To retain clumps of viable non-pine natural regeneration;</li> <li>• To retain existing CWD in wildlife tree patches and reserve areas; and</li> <li>• To leave Stub Trees to varying degrees (e.g. along riparian / Machine Free Zones).</li> </ul>
<b>Means of Achieving</b>	Companies will achieve objectives and targets specific to CWD through the possible

<p><b>Objective &amp; Target</b></p>	<p>application of the following procedures and controls:</p> <ul style="list-style-type: none"> <li>• Training for licensee staff and contractors specific to CWD management and best management practices;</li> <li>• Adhering to legislative requirements specific to CWD;</li> <li>• Harvesting preworks and inspections;</li> <li>• Conducting implementation monitoring to assess success of implementation of controls and possible opportunities for improvement; and</li> <li>• Conducting effectiveness monitoring to assess if controls are effective at achieving the desired results.</li> </ul> <p>CWD is managed on a rotation basis and, as such, strategies must address recruitment of CWD over the short and long-term.</p>												
<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>The following table shows the status from 2009 to 2011 for the percent of audited cut blocks where post harvest CWD levels are within the targets contained in Plans.</p> <table border="1" data-bbox="516 659 1321 852"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>100%</td> <td>100%</td> <td>100%</td> </tr> <tr> <td>TFL30</td> <td>100%</td> <td>100%</td> <td>100%</td> </tr> </tbody> </table>		2008/09 Status	2009/10 Status	2010/11 Status	PG	100%	100%	100%	TFL30	100%	100%	100%
	2008/09 Status	2009/10 Status	2010/11 Status										
PG	100%	100%	100%										
TFL30	100%	100%	100%										
<p><b>Forecast</b></p>	<p>By following the “Strategies” and “Means of Achieving Objectives and Targets” sections of this indicator detail sheet, it is anticipated that upon completion of harvesting, piling and site preparation activities, areas will contain a range of standing and downed CWD sizes in a range of decay classes that will deliver a supply of CWD in the short through to the long-term.</p>												
<p><b>Target</b></p>	<p>100% of blocks harvested annually will meet targets.</p>												
<p>Basis for the Target</p>	<p>Legal requirements, “Coarse Woody Debris Best Management Practices”, “Chief Forester’s Guidance on Coarse Woody Debris Management”, and studies conducted in the DFA on “Post-harvest Monitoring for Coarse Woody Debris and Stand Structural Retention 2008”.</p>												
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>Periodic monitoring will be conducted during harvest inspections completed during operations. Harvest inspections will assess consistency with legal requirements and CWD debris best management practices during active operations. When instances of non-compliance or non-conformance are identified, this will be entered into the licensee specific incident tracking system.</p>												
<p>Annual</p>	<p>Report compliance with legal requirements and conformance with operational guidelines for CWD management based on blocks reviewed as part of implementation monitoring. On an annual basis, a subset of blocks with harvesting completed during the reporting period will be randomly assessed for consistency with legal requirements and CWD Best Management Practices. Current status results will be calculated by determining the number of blocks consistent with legislative and operational controls divided by the total number of blocks assessed during the reporting period.</p>												
<p>Variance</p>	<p>-10%</p>												

***5.7.16 3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance***

<b>Indicator</b>	<b>3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance</b>
<b>Indicator Statement(s)</b>	<p>3.2.1(a) - The percentage of watersheds with active operations that have had a watershed assessment completed.</p> <p>3.2.1(b) - The percentage of active operations within high-risk watersheds that implement the recommendations of a hydrologic assessment.</p> <p>3.2.1(c) – Percentage of high hazard drainage structures in watersheds with identified water quality concerns that have mitigation strategies implemented.</p>
<b>Element(s)</b>	3.2 Water Quality and Quantity
<b>Value(s) and Objective(s)</b>	<p><u>Value 3.2:</u> Water conservation</p> <p><u>Objective 3.2:</u> Maintain water quality and water quantity in the Defined Forest Area (DFA).</p>
<b>Strategies</b> Description	<p>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 affect water values varies according to topography, soil properties, vegetation types, and climate. Certain watersheds can be classified as more sensitive to the impacts of disturbance either because of their environmental and climatic attributes or because of their inherent value to aquatic life and communities that are dependent on the water. The peak flow of a watershed is directly influenced by the amount of area that is recently harvested or otherwise recently disturbed (Equivalent Clear-cut Area or ECA). These disturbed areas accumulate more snow and subsequently can deliver more water as the snow melts more rapidly in the spring.</p> <p>Roads and stream crossings in particular can have a large impact on water quality in a watershed. In general, steps are taken on all drainage structures to minimize the risk of sediment delivery into watercourses. Within sensitive watersheds, local conditions such as soil type, topography, road grade, road construction history and structure type will determine how great a risk a drainage structure is to negatively impact water quality.</p> <p><b>3.2.1(a &amp; b):</b></p> <p>Predicting the potential impacts of increased peak flow in a particular watershed requires an assessment of the factors that contribute to the sensitivity of the watershed. Watersheds in the northern interior of British Columbia have a wide range of sensitivity to peak flows. The sensitivity of a watershed can be evaluated by examining five parameters: peak flow buffering (lakes and wetlands), terrain stability, watershed relief, channel pattern and channel stability. A full assessment by a qualified professional may be warranted in some situations but the process is time consuming and costly. Employing this approach across the DFA would be cost prohibitive. The process described here can be completed as part of the planning for proposed harvesting in the DFA. It involves evaluating the risk to a particular watershed.</p> <p>Where the Peak Flow Index (PFI) is expected to be above the threshold value as a result of a combination of past and proposed harvesting, Canfor will initiate a watershed sensitivity analysis as part of a risk assessment procedure (Dobson 2009). This assessment will result in a risk rating for individual watersheds. If a the watershed risk ranks high through this process, a qualified professional will be consulted to provide a more thorough review and recommendations on proposed harvesting and road construction.</p>



	<p><b>3.2.1(c)</b> recognizes the importance of identifying high risk drainage structures in those watersheds that were determined to be sensitive. In order to manage the risks to water quality, the target requires that a mitigation strategy be in place for each of the identified structures and that it is being followed. A variety of strategies could be employed for mitigation based on site specific situations. These could include:</p> <ul style="list-style-type: none"> <li>• Ditch blocks,</li> <li>• Sumps,</li> <li>• Silt fences,</li> <li>• Cross drains,</li> <li>• Grass seeding the cut or fill slopes and the road bed, and</li> <li>• Water bars.</li> </ul>												
<p>Means of Achieving Objective &amp; Target</p>	<p><b>3.2.1(a):</b> Conduct an inventory of sensitive watersheds and assign a peak flow target to each. Where peak flow targets are exceeded in a sensitive watershed (either currently or as a result of planned activity), further evaluations are conducted. These evaluations could include a watershed sensitivity review, a stream quality crossing index survey( indicator 3.2.1(b)), a height performance of regenerating stands, road inspections, a channel stability assessment, or other suitable evaluation as determined by the qualified professional.</p> <p><b>3.2.1(b):</b> All active watersheds will be assessed for risk. Where the parameters determining risk result in a watershed being defined as high risk, Canfor will seek the recommendations of a professional qualified to evaluate the condition of a watershed and the impacts of further development. Where recommendations are in place, future operations will be conducted in accordance with those recommendations or documented with a rationale signed by a qualified registered professional.</p> <p><b>3.2.1(c):</b> Conduct an inventory of road related soil erosion events that introduce sediment into a stream identified in annual road inspections and develop a mitigation strategy for each of the events. Action plans with respect to the identified erosion events will be implemented and monitored.</p>												
<p>Current Status, Predicted Results or Outcome</p>	<p><b>3.2.1(a):</b> The following table identifies the percentage of watersheds with active operations that have had a watershed assessment completed (2012 Baseline data).</p> <table border="1" data-bbox="656 1188 1182 1402"> <thead> <tr> <th>Total Number of Watersheds with Active Operations</th> <th>Total Number of Watersheds with Assessment Completed</th> <th>DFA%</th> </tr> </thead> <tbody> <tr> <td>79</td> <td>79</td> <td>100%</td> </tr> </tbody> </table> <p><b>3.2.1(b):</b> The following table identifies the percentage of active operations within high-risk watersheds that had implemented the recommendations of a hydrologic assessment (2012 Baseline data).</p> <table border="1" data-bbox="607 1558 1230 1772"> <thead> <tr> <th>Total number of active operations within high risk watersheds</th> <th>Number of these operations that had implemented the recommendations of a hydrologic assessment</th> <th>DFA%</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>2</td> <td>100%</td> </tr> </tbody> </table> <p><b>3.2.1(c):</b> 100% of high hazard drainage structures in watersheds with identified water quality concerns that have had mitigation strategies implemented (2012 Baseline data).</p>	Total Number of Watersheds with Active Operations	Total Number of Watersheds with Assessment Completed	DFA%	79	79	100%	Total number of active operations within high risk watersheds	Number of these operations that had implemented the recommendations of a hydrologic assessment	DFA%	2	2	100%
Total Number of Watersheds with Active Operations	Total Number of Watersheds with Assessment Completed	DFA%											
79	79	100%											
Total number of active operations within high risk watersheds	Number of these operations that had implemented the recommendations of a hydrologic assessment	DFA%											
2	2	100%											

<b>Forecast</b>	By following the “Strategies” and “Means of Achieving Objectives and Targets” sections of this indicator detail sheet, it is anticipated that there will be acceptable levels of water quality and quantity. Riparian systems will maintain existing uses and support human and ecological communities and aquatic life. Introduction of sedimentation into watercourses’ is minimized.
<b>Target</b>	3.2.1(a): 100%. 3.2.1(b): 100%. 3.2.1(c): 100%.
Basis for the Target	Places emphasis and resources on most sensitive and high risk areas. Ensures focused assessment of watershed conditions and drainage structures.
<b>Monitoring &amp; Measurement</b> Periodic	Fisheries sensitive watersheds may be developed in the Prince George District in the short-term. If a new selection of watersheds is identified, this plan will be updated in accordance with the legislated designation of watersheds. Measurements and analysis may need to occur on the new set of watersheds.
Annual	3.2.1(a): Report the number of sensitive watersheds where peak flow targets were exceeded and harvesting occurred. Identify the watershed(s) and, for each, whether a further detailed assessment was conducted prior to harvest. 3.2.1(b): Report the number of high risk drainage structures within the sensitive watersheds. Further report whether each had a mitigation strategy and whether that strategy was implemented as planned. 3.2.1(c): Report the number of road related soil erosion events that introduce sediment into a stream. Identify whether these events were addressed (eg. steps taken to rehabilitate damage).
Variance	3.2.1(a): 0% 3.2.1(b): 0% 3.2.1(c): 0%

5.7.17 4.1.1 Net Carbon uptake

<b>Indicator</b>	<b>4.1.1 Net Carbon uptake</b>
<b>Indicator Statement(s)</b>	4.1.1(a) - Areas with stand damaging agents will be prioritized for treatment.
<b>Element(s)</b>	4.1 Carbon Uptake and Storage 5.1 Timber and Non-Timber Benefits
<b>Value(s) and Objective(s)</b>	<u>Value 4.1:</u> Uptake and storage of carbon in forest ecosystems. <u>Objective 4.1:</u> Facilitate carbon uptake and storage within harvested areas. <u>Value 5.1:</u> Short and long-term benefits. <u>Objective 5.1.1:</u> Maintaining a flow of timber benefits.
<b>Strategies</b> Description	<p>Damaging agents are considered to be biotic and abiotic factors (fire, wind, insects etc.) that negatively affect the uptake and storage of carbon in forest ecosystems and reduce the net value of commercial timber. To reduce losses to timber value, it is necessary to ensure that if commercially viable timber is affected by damaging agents, that the timber is recovered before its value deteriorates.</p> <p>All licensees target damaged stands in a similar manner. Each year, the volume of damaged timber is assessed within the DFA. Of this volume, licensees prioritize planning and harvesting activities based on levels of attack, stage of attack, wood quality and milling capacity/needs. This indicator reports out on the licensees' success in ensuring areas with stand damaging agents have been assessed and have been prioritized for treatment if required and, thereby able to minimize value losses.</p> <p>The most serious stand damaging agent in the Prince George DFA is the mountain pine beetle, which has killed millions of mature, commercially viable lodgepole pine. Prioritizing infested stands for treatment can contribute to sustainable forest management in several ways. Removing infested trees can slow the spread of beetles to adjacent uninfested stands and allows Canfor to utilize trees before they deteriorate. Also, once harvesting is complete the area can be replanted, turning an area that would have released carbon through the decomposition of dead trees into the carbon sink of a young plantation.</p> <p>It should be noted that prioritizing a stand for treatment might not guarantee the stand would be treated. The size of the stand, the threat the agent poses, the location and the merchantability of the timber all have to be considered when prioritizing which stands will be treated first. Some stands may have such a low priority that the only "treatment" is to monitor the area until such a point when more active operations are deemed necessary.</p> <p>Treating areas with stand damaging agents will provide other societal benefits. Burned and diseased killed stands may be aesthetically unpleasing, and their harvesting and reforestation will create a more pleasing landscape. Windthrown stands restrict recreational use and can foster the growth of insect pests such as the spruce bark beetle. Thus, prioritizing areas with stand damaging agents for treatment will help to maintain a more stable forest economy and achieve social benefits through enhanced aesthetics and recreational opportunities.</p> <p>In the interim, until government has finalized assumptions for carbon budget modeling, Canfor's carbon strategy will be:</p> <ul style="list-style-type: none"> <li>• To maintain some old growth on the land base for carbon storage,</li> <li>• To ensure prompt reforestation for carbon uptake, and</li> <li>• To minimize permanent access structures in order to maintain forest productivity for carbon uptake.</li> </ul> <p>Canfor will continue to report on the target within this indicator (existing areas of non-</p>

	<p>forested types artificially converted to forested types), as well as related indicators and targets for regeneration delay, additions and deletions to the forest area and retention of old forest. Collectively, these indicator statements and targets demonstrate commitment to positively influence carbon balance within the management unit.</p> <p>Canfor 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 least, Canfor will rely upon forest carbon analysis conducted in conjunction with the next Timber Supply Review.</p>												
<p>Means of Achieving Objective &amp; Target</p>	<p>Prioritizing stands with damaging agents for treatment is part of an overall forest health strategy. Treatment of stands with damaging agents may take several forms. These may include silviculture treatments on plantations with blister rust problems or falling and burning individual stems to control bark beetles. However, the main treatment employed to manage stand damaging agents is harvesting dead or dying stands, followed by prompt reforestation where required.</p> <p>Licenseses’ Planning Foresters are responsible for co-ordinating the detection of damaged timber, and Woodlands Managers are responsible for reviewing and updating volume targets each year.</p> <p>Licenseses are responsible for updating databases with current forest health conditions. Co-ordination with other licenseses for the efficient and timely treatment of DFA stand damaging agents is crucial for this indicator's target to be met.</p>												
<p>Current Status, Predicted Results or Outcome</p>	<p>The following table identifies the licenseses’ success with prioritizing treatment for areas with stand damaging agents.</p> <table border="1" data-bbox="524 972 1328 1161"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>100%</td> <td>100%</td> <td>100%</td> </tr> <tr> <td>TFL30</td> <td>N/A*</td> <td>N/A*</td> <td>N/A*</td> </tr> </tbody> </table> <p>* previously not reported on TFL30</p>		2008/09 Status	2009/10 Status	2010/11 Status	PG	100%	100%	100%	TFL30	N/A*	N/A*	N/A*
	2008/09 Status	2009/10 Status	2010/11 Status										
PG	100%	100%	100%										
TFL30	N/A*	N/A*	N/A*										
<p>Forecast</p>	<p>The rapid spread of the mountain pine beetle and the unpredictability of other agents, such as fire, make it difficult to accurately forecast the success of meeting the indicator target. However, it is important to identify what the accepted target means to SFM. By targeting damaged stands, forest managers are able to reduce the spread of forest health agents to adjacent stands, parks, private lands, etc.; utilize timber before it deteriorates; and reforest areas with healthy young plantations.</p> <p>Failure to prioritize areas with stand damaging agents for treatment means forest managers are allowing significant areas to either lose economic value, or to allow existing problems to become much worse. For example, by choosing to harvest green, uninfested pine stands while other stands are beetle infested or dead, the opportunity to prevent further spread would be lost. Dead, unsalvaged stands will start to decay, losing economic value that could have been realized if they were prioritized for harvesting. In addition to economic losses, there could be ecological costs to failing to treat stands with damaging agents. As these stands die and decay, they will release carbon dioxide into the atmosphere, thereby contributing to global climate change. Prioritizing these stands for harvesting will not only improve economic values but will allow a healthy, young, carbon-sequestering plantation to become established.</p> <p>Other costs may come from failing to treat damaged stands. Allowing dead and diseased stands to persist on the landscape may result in more severe wildfires that destroy or damage property in the DFA. This will negatively affect land owners and communities. Thus,</p>												

	achieving the indicator's target may protect societal values in addition to providing ecological and economic benefits.
<b>Target</b>	100%
Basis for the Target	The target for this indicator has been established at 100% to ensure that all areas with stand damaging agents are prioritized within the DFA. The mountain pine beetle epidemic remains the focus of the Licensee's stand damaging agent prioritization. The Licensee will continue to conduct annual reviews of planning areas to identify areas with stand damaging agents.
<b>Monitoring &amp; Measurement</b>	N/A
Periodic	
Annual	The Licensee is responsible for monitoring planning areas for stand damaging agents and prioritizing these areas. Reports will be generated to identify the percent of areas with stand damaging agents that have been prioritized in the DFA.
Variance	-10%.

[Element 4.2 Forest Land Conversion]

Core Indicator 4.2 Additions and deletions to the forest area is covered under Indicator 2.2.1(a) (above).

[Element 5.1 Timber and Non-Timber Benefits]

Core Indicator 5.1.1(a) % of volume harvested compared to allocated harvest level is covered under Indicator 2.2.2 (above).

**5.7.18 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA**

<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>Indicator Statement(s)</b>	5.1.1(b). Conformance with strategies for non-timber benefits identified in Plans.																														
<b>Element(s)</b>	5.1 Timber and Non-Timber Benefits																														
<b>Value(s) and Objective(s)</b>	<u>Value 5.1:</u> Short and long-term benefits. <u>Objective 5.1.2:</u> Maintaining a flow of non-timber benefits.																														
<b>Strategies</b> Description	<p>Forests represent not only a return on investment for an organization (measured, for example, in profit/loss, or product output) 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>Non-timber benefits</u> can be assessed on a harvest unit specific basis by assessing operational plan commitments designed to reduce any potential impact of the operation on other forest users and stakeholders. These plan commitments could include specific actions to assist ranchers, trappers, guides, resort owners, mineral rights holders, private land owners, etc. to manage their licensed obligations on shared public forest land. Actions within plans could also involve public expectations related to forest access, visual quality or specific recreational or ecotourism opportunities. Plan commitments could also include actions to manage or protect sites that are culturally important, sacred or spiritual to local Aboriginals, berry pickers and gatherers of other food, fibre or medicinal plants.</p>																														
<b>Means of Achieving Objective &amp; Target</b>	<p>Companies 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>Continue discussions with existing licence/rights holders, interested public and Aboriginals.</p> <p>Operational plans incorporate commitments to manage concerns related to those discussions. Plans are properly executed providing desired results. Post harvest evaluations and other inspections assess plan conformance.</p>																														
<b>Current Status, Predicted Results or Outcome</b>	<p>The table below shows the reporting format and current status of conformance with strategies for non-timber benefits identified in Plans (2012 Baseline data).</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Value</th> <th>Plans<sup>1</sup></th> <th>Non-conformances<sup>2</sup></th> <th>Percent Conformance</th> </tr> </thead> <tbody> <tr> <td>Guide</td> <td>2</td> <td>0</td> <td>100</td> </tr> <tr> <td>Lakeshore</td> <td>0</td> <td>0</td> <td>n/a</td> </tr> <tr> <td>Range</td> <td>1</td> <td>0</td> <td>100</td> </tr> <tr> <td>Recreation</td> <td>1</td> <td>0</td> <td>100</td> </tr> <tr> <td>Riparian</td> <td>100</td> <td>0</td> <td>100</td> </tr> <tr> <td>Soil Erosion/Stream Sediment</td> <td>67</td> <td>0</td> <td>100</td> </tr> </tbody> </table>			Value	Plans <sup>1</sup>	Non-conformances <sup>2</sup>	Percent Conformance	Guide	2	0	100	Lakeshore	0	0	n/a	Range	1	0	100	Recreation	1	0	100	Riparian	100	0	100	Soil Erosion/Stream Sediment	67	0	100
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	<table border="1"> <tr> <td>Trapper</td> <td>0</td> <td>0</td> <td>n/a</td> </tr> <tr> <td>Tenure/Private land</td> <td>0</td> <td>0</td> <td>n/a</td> </tr> <tr> <td>Terrain</td> <td>0</td> <td>0</td> <td>n/a</td> </tr> <tr> <td>VQO</td> <td>3</td> <td>0</td> <td>100</td> </tr> <tr> <td>Other</td> <td>0</td> <td>0</td> <td>n/a</td> </tr> <tr> <td>Total</td> <td>174</td> <td>0</td> <td>100</td> </tr> </table> <p><sup>1</sup> - Plans that have commitments identified.  <sup>2</sup> - Plans that did not meet identified commitments.</p>	Trapper	0	0	n/a	Tenure/Private land	0	0	n/a	Terrain	0	0	n/a	VQO	3	0	100	Other	0	0	n/a	Total	174	0	100
Trapper	0	0	n/a																						
Tenure/Private land	0	0	n/a																						
Terrain	0	0	n/a																						
VQO	3	0	100																						
Other	0	0	n/a																						
Total	174	0	100																						
<b>Forecast</b>	<p>By following the “Strategies” and “Means of Achieving Objectives and Targets” sections of this indicator detail sheet, it is anticipated that:</p> <ul style="list-style-type: none"> <li>• Forest operations will respect and reflect the interests of non-timber resource users, local public and Aboriginals, and</li> <li>• Short and long-term harvest flows will reflect forest conditions, forest practices, and the socio-economic objectives of the Crown (see indicator 2.2.2 for more detail on forecast).</li> </ul>																								
<b>Target</b>	No non-conformances for site level plans.																								
Basis for the Target	Developed with input from stakeholders, neighbouring landowners, local license holders, broader public and Aboriginal communities. It is essential that holders of overlapping land use tenures, communicate regularly with one another and with the public and Aboriginal communities. Conforming to commitments in plans will help to measure the company’s performance of operating on public lands.																								
<b>Monitoring &amp; Measurement</b> Periodic	N/A																								
Annual	Report the number of cut blocks harvested having operational plan non-conformances related to non-timber resource users. Also report the total number of cut blocks harvested that contained commitments involving non-timber resource users.																								
Variance	0																								



***5.7.19 5.2.1 Level of investment in initiatives that contribute to community sustainability***

<b>Indicator</b>	<b>5.2.1 Level of investment in initiatives that contribute to community sustainability</b>														
<b>Indicator Statement(s)</b>	5.2.1(a) - Percent of money spent on forest operations and management in the DFA provided by North Central Interior suppliers and contractors														
<b>Element(s)</b>	5.2 Communities and Sustainability														
<b>Value(s) and Objective(s)</b>	<p><u>Value 5.2:</u> Community well-being</p> <p><u>Objective 5.2.1:</u> Support opportunities for maintaining a resilient and stable community.</p>														
<b>Strategies Description</b>	<p>In addition to the many biological and ecological benefits provided by forests, they also contribute social and economic benefits. 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, contractors, and others; stability and opportunities for communities; and revenue for local, provincial, and federal governments.</p> <p>In the same way that larger forest organizations depend on a secure flow of resources to justify investment in an area, small businesses depend on a sustained flow of opportunities to develop and invest in their local community. As the majority of forest workers are hired locally, communities benefit by forest planning and operations.</p> <p>This target measures the amount of spending in forest related activities that occur on the DFA by local contractors/suppliers. For the purposes of this target, a local contractor or supplier is defined as one that resides within or in the vicinity of the DFA. In the PG SFMP, the North Central Interior is defined as including communities from 100 Mile House to Mackenzie (south to north) and from Smithers to McBride (west to east).</p> <p>The total dollar value of goods and services considered to be local will be calculated relative to the total dollar value of all goods and services provided. This calculation will be used to derive the percentage of money spent on forest operations and management of the DFA from suppliers and contractors within local communities.</p>														
<b>Means of Achieving Objective &amp; Target</b>	The licensee will track all spending pertaining to forest related activities (operations, management, donations) within the DFA, separated by that occurring locally.														
<b>Current Status, Predicted Results or Outcome</b>	<p>The following table shows the percentage of money spent on forest operations and management in the DFA provided by North Central Interior suppliers and contractors.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>91.3%</td> <td>94.5%</td> <td>91.5%</td> </tr> <tr> <td>TFL30</td> <td>95%</td> <td>100%</td> <td>85%</td> </tr> </tbody> </table>				2008/09 Status	2009/10 Status	2010/11 Status	PG	91.3%	94.5%	91.5%	TFL30	95%	100%	85%
	2008/09 Status	2009/10 Status	2010/11 Status												
PG	91.3%	94.5%	91.5%												
TFL30	95%	100%	85%												
<b>Forecast</b>	Achievement of the target will support resilient and stable communities within and adjacent of the DFA. Localized spending may also provide better management through local knowledge.														
<b>Target</b>	≥90% of dollars spent in local communities (5 year rolling average).														
<b>Basis for the Target</b>	Target reflects a desire to maintain or enhance community well-being.														

<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	Use internal accounting systems to calculate and report out on the percent of dollars spent in local communities (5 year rolling average) during the reporting period.
Variance	-5%

**5.7.20 5.2.1 Level of investment in initiatives that contribute to community sustainability**

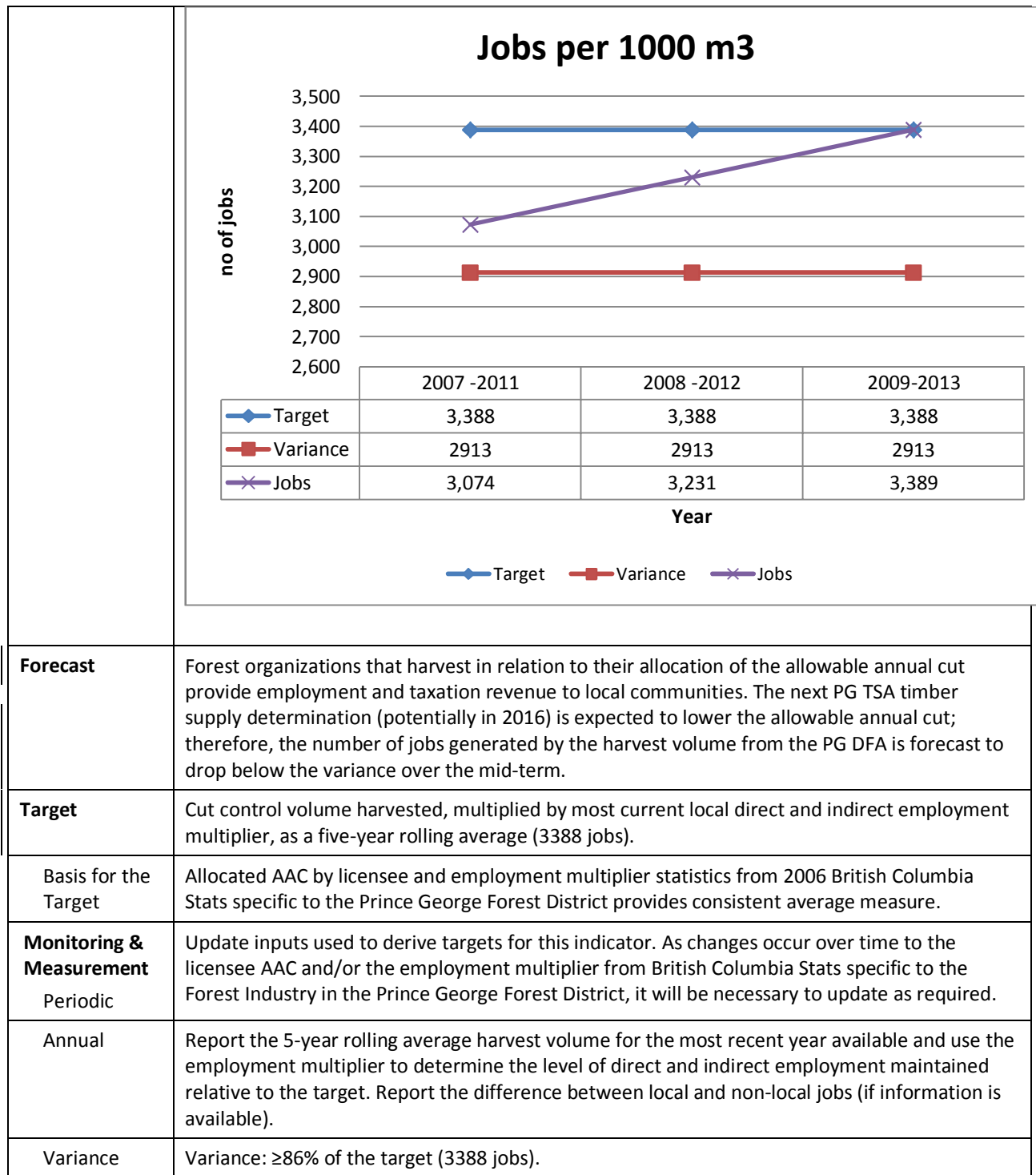
<b>Indicator</b>	<b>5.2.1 Level of investment in initiatives that contribute to community sustainability</b>														
<b>Indicator Statement(s)</b>	5.2.1(b) - Number of donations to the local community - applies to Canfor only.														
<b>Element(s)</b>	5.2 Communities and Sustainability														
<b>Value(s) and Objective(s)</b>	<u>Value 5.2:</u> Community well-being <u>Objective 5.2.1:</u> Support opportunities for maintaining a resilient and stable community.														
<b>Strategies</b> Description	<p>This measure indicates how the licensee provides economic and social benefits to the public over and above wages, taxes and stumpage fees through donations and involvement in local community organizations. Types of support opportunities within the local community vary from providing personnel, equipment and/or facilities, to providing cash and product donations. This measure is an important component of a community's economic and social stability, but it is also difficult to quantify as support opportunities often go unrecorded.</p> <p>Support opportunities help to increase awareness of sustainable forest management and its role within the DFA. This can indirectly lead to building a strong community and creating a viable labour force.</p>														
Means of Achieving Objective & Target	Targets were established from an estimate of one major donation to the community every two months for a total of 6 per year.														
<b>Current Status,</b> Predicted Results or Outcome	<p>The following table shows the number of donations to the local community.</p> <table border="1"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>TFL30</td> <td>8</td> <td>8</td> <td>10</td> </tr> </tbody> </table>				2008/09 Status	2009/10 Status	2010/11 Status	PG	N/A	N/A	N/A	TFL30	8	8	10
	2008/09 Status	2009/10 Status	2010/11 Status												
PG	N/A	N/A	N/A												
TFL30	8	8	10												
<b>Forecast</b>	Achievement of the target will support resilient and stable communities within and adjacent to the DFA. Localized spending may also provide better management through local knowledge.														
<b>Target</b>	>=6 donations														
Basis for the Target	Target reflects a desire to maintain or enhance community well-being.														
<b>Monitoring &amp; Measurement</b> Periodic	N/A														
Annual	Use internal accounting systems to calculate and report out on the number of donations to the local community during the reporting period.														
Variance	0														

***5.7.21 5.2.2 Level of investment in training and skills development***

<b>Indicator</b>	<b>5.2.2 Level of investment in training and skills development</b>
<b>Indicator Statement(s)</b>	5.2.2 - Training in environmental & safety procedures in compliance with company training plans
<b>Element(s)</b>	5.2 Communities and Sustainability
<b>Value(s) and Objective(s)</b>	<u>Value 5.2:</u> Community well-being <u>Objective 5.2.2:</u> Support opportunities for maintaining a resilient and stable community.
<b>Strategies Description</b>	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.  This indicator complements Core Indicator 6.3.2 <i>Evidence of cooperation with DFA-related workers and their unions to improve and enhance safety standards, procedures, and outcomes in all DFA-related workplaces and affected communities</i> , where the proposed indicator statement is “Implementation and maintenance of certified safety program”.
<b>Means of Achieving Objective &amp; Target</b>	The Licensee will 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>Current Status, Predicted Results or Outcome</b>	In 2012, the level of training in environmental & safety procedures in compliance with company training plans was 100%.
<b>Forecast</b>	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>	100% of company employees and contractors will have both environmental & safety training.
<b>Basis for the Target</b>	A trained workforce is critical to safe and proper execution of plans. The variance allows for some discretion with respect to contractors or employees whose work is insulated from forest operations (for example, administrative or clerical work).
<b>Monitoring &amp; Measurement Periodic</b>	When training is completed by contractors or employees, it will be necessary to track training taken by an employee as per the applicable training plan. These results can then be summarized to determine the percentage of training taken relative to the training plan.
<b>Annual</b>	Report the total number of company employees and forestry contractors, and identify the number of those that had received both environmental and safety training in accordance with training plan expectations.
<b>Variance</b>	-5%

*5.2.3 Level of direct and indirect employment*

<b>Indicator</b>	<b>5.2.3 Level of direct and indirect employment</b>
<b>Indicator Statement(s)</b>	5.2.3 - Level of Direct & Indirect Employment
<b>Element(s)</b>	5.2.3 Communities and Sustainability
<b>Value(s) and Objective(s)</b>	<u>Value 5.2:</u> Community well-being <u>Objective 5.2.3:</u> Support opportunities for maintaining a resilient and stable community.
<b>Strategies</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, suppliers, 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. Stable employment is a clear indication of the sustainable economic well-being of individuals and communities. Employment from the forest sector is an important contributor toward community stability, particularly rural communities that tend to be mostly resource-dependent. Within the context of the forest industry, direct employment refers to employment directly related to the production of forest products or services. As a result of this direct employment, employment is also generated in the businesses that supply goods and services to the forest sector. This is referred to as indirect employment. Finally, when these directly and indirectly generated incomes are spent and re-spent on a variety of items in the broader economy (e.g., food, clothing, entertainment), it gives rise to induced employment effects.</p> <p>Based on information compiled from the Socio-Economic Analysis completed for the recent Prince George Timber Supply Area Timber Supply Review (TSR), an employment multiplier of 1.95 direct, indirect, and induced jobs per 1000 m<sup>3</sup> of harvest is used. This includes direct employment coefficients for harvesting (.258), lumber &amp; wood manufacturing (.261), pulp &amp; paper (0.0717) and primary processing outside the PG TSA (.02) plus an indirect and induced employment ratio of 1.34 jobs per 1000 m<sup>3</sup> of volume harvested.</p> <p>Organizations that harvest at sustainable harvest levels in relation to the allocated supply levels determined by government authorities continue to provide direct and indirect employment opportunities. The harvest level is set using a rigorous process that considers social, economic and biological criteria.</p>
Means of Achieving Objective & Target	Organizations contribute to direct and indirect employment within the region and to sustainable harvesting by adhering to their apportioned harvest volume within each respective TSA. Cut control regulations dictate the short-term harvest flexibility.
<b>Current Status, Predicted Results or Outcome</b>	5-year rolling average of actual annual cut for Canfor in the DFA = 2,366,460 m <sup>3</sup> (2009 to 2013). 2,366,460 m <sup>3</sup> * (0.612 direct jobs/1000m <sup>3</sup> ) + 1.34 indirect jobs per direct job = 3,388 jobs. Variance based on lowest annual cut from past 5 years (2009 cut of 2,041,903 m <sup>3</sup> ) = 2,913 jobs (86% of the jobs calculated using the 5-year rolling average). The following graph illustrates the current status trends, and forecast for employment for the PG DFA.



*5.7.22 5.2.4 Level of Aboriginal participation in the forest economy*

<b>Indicator</b>	<b>5.2.4 Level of Aboriginal participation in the forest economy</b>
<b>Indicator Statement(s)</b>	5.2.4 - Number of opportunities for Aboriginals to participate in the forest economy.
<b>Element(s)</b>	5.2 Communities and Sustainability
<b>Value(s) and Objective(s)</b>	<u>Value 5.2:</u> Community well-being <u>Objective 5.2.4:</u> Provide/support opportunities for maintaining a resilient and stable community.
<b>Strategies</b> Description	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 target looks specifically at Aboriginal participation in the forest economy, evaluating licensees' efforts to build capacity within Aboriginal communities on matters related to the forest industry. For the purposes of this indicator, a "realized" opportunity means timber sales licenses, direct employment, signed partnerships, joint ventures, co-operative agreements, memorandums of understanding or business contracts over a minimum value. The target recognizes that there are occasions when Aboriginals, after being given an opportunity, elect not to participate and is respectful of those decisions.
Means of Achieving Objective & Target	The Licensee engages in building mutually beneficial relationships with Aboriginal peoples.
<b>Current Status, Predicted Results or Outcome</b>	There were 4 realized opportunities in the DFA for Aboriginals to participate in the forest economy (2011 Baseline).
<b>Forecast</b>	Operational activities and plans that recognize and manage for known Aboriginal rights and duly established title. The Licensees supports Aboriginals in building organizational capacity.  As responsible stewards of public forest land, licensees engage in building mutually beneficial relationships with Aboriginal peoples.
<b>Target</b>	≥ number of realized opportunities from baseline assessment (3-year rolling average).
Basis for the Target	Licensees engage in building mutually beneficial relationships with Aboriginal peoples. Target ties directly to Canfor's SFM Commitments.
<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	Report on the number of realized opportunities and total dollar value with applicable Aboriginals (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 specific work/service agreement or joint tenure arrangement with a First Nation Band or Aboriginal Contractor. For consistency in reporting, count multiple work agreements with one band or contractor or purchase agreements with one band or contractor as a single business contract. Include opportunities by also reporting on contracts for work/services offered directly to Aboriginals

	that, for whatever reason, were declined. Subject to privacy concerns, look into reporting the types of opportunities. List the First Nations and Métis within the DFA, and report out how they are contacted. Report as a 3-year rolling average.
Variance	-10% of baseline.



***5.7.23 6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights***

<b>Indicator</b>	<b>6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights</b>		
<b>Indicator Statement(s)</b>	6.1.1 - Employees will receive Aboriginal awareness training		
<b>Element(s)</b>	6.1 Aboriginal and Treaty Rights		
<b>Value(s) and Objective(s)</b>	<u>Value 6.1:</u> Aboriginal title and rights and Treaty Rights <u>Objective 6.1.1:</u> Recognition and respect for Aboriginal title and rights and Treaty Rights.		
<b>Strategies</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, medicinal plants, 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. Therefore, it is important to identify these legal requirements as a starting point. It is important for companies 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 the licensee to comply with laws and open communication with local Aboriginals requires that company staff members have a good understanding of Aboriginal title and rights and treaty rights.</p>		
Means of Achieving Objective & Target	The Licensee invests in cultural awareness and skill development by ensuring that appropriate Forest Management Group employees have received Aboriginal awareness training. Training is to occur as part of a training/orientation program for appropriate new employees, as outlined in each company’s training matrix and the job function and responsibilities of each employee. Refresher training to occur every 5 years or sooner if training materials or Aboriginal law substantially change.		
<b>Current Status,</b> Predicted Results or Outcome	<p>The following table shows the percentage of employees receiving Aboriginal awareness training by Canfor:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><b>2010/11 Status</b></td> </tr> <tr> <td style="text-align: center;">100%</td> </tr> </table>	<b>2010/11 Status</b>	100%
<b>2010/11 Status</b>			
100%			
<b>Forecast</b>	Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local Aboriginals.		
<b>Target</b>	100%		

Basis for the Target	Legal obligations, communication process with First Nations and Métis. Sharing information and communication with First Nations and Métis on Forest Stewardship Plans supports the provincial government’s legal obligation to consult with First Nations and Métis regarding Aboriginal rights and title. The participating licensee is committed to assisting the Crown in carrying out its duty to consult by sharing information and endeavouring to address concerns. Training helps employees to understand Aboriginal title and rights, treaty rights and the potential for Aboriginal interests.
<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	Utilize the employee training database to plan and record awareness training. Report the number of active employees working within the DFA that have received the training within the past five years compared to the total number of employees required to have training as per the companies training matrix.
Variance	-10%

**5.7.24 6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans.**

**6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities**

<b>Indicator</b>	<p><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></p> <p><b>6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities</b></p>
<b>Indicator Statement(s)</b>	6.1.2 - Evidence of best efforts to share interests and plans with Aboriginal communities.
<b>Element(s)</b>	6.1 Aboriginal and Treaty Rights 6.4 Fair and Effective Decision-Making
<b>Value(s) and Objective(s)</b>	<p><u>Value 6.1:</u> Aboriginal title and rights and treaty rights. <u>Objective 6.1:</u> Recognition and respect for Aboriginal title and rights and treaty rights.</p> <p><u>Value 6.4:</u> Public participation in decision making processes. <u>Objective 6.4:</u> A clear process for a wide public participation in SFM.</p>
<b>Strategies Description</b>	<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 evolving legislative landscape. Therefore, it is important to identify these legal requirements as a starting point. It is important for the Licensee to have an understanding of asserted Aboriginal title and rights, and treaty rights, as well as the Aboriginal interests that relate to the DFA.</p> <p>Open, respectful communication with local Aboriginal communities includes not only the Licensee understanding the Aboriginal rights and interests within their asserted traditional territory but for Aboriginals to understand the forest management plans of organizations. With this open dialogue, the two parties can then best work towards plans and operations that are mutually acceptable to both parties. The re-wording of the core indicator statement to include the phrase “share interests and plans” is intended to demonstrate two-way communication, rather than one-way. The reference to “Aboriginal communities” corresponds to licensees interacting with the Natural Resources Office and Chief and Council (or equivalent positions).</p> <p>For the purpose of this indicator, “management plans” include Forest Stewardship Plans (major amendments), TFL Management Plans, Pest Management Plans, block information sharing, and SFM Plans. “Clear understanding” is very difficult to measure, but will be considered as part of the continuum of relationship building between licensees and Aboriginal communities, and will be a qualitative measure based on the summary of interests and concerns. “Best Efforts” will consist of an initial attempt to contact by mail, a number of follow-up phone calls and an interest in meeting in person (if required).</p>
<b>Means of Achieving Objective &amp; Target</b>	Open, respectful communication of forest management plans with affected local Aboriginals. “Best efforts” is a very subjective term, but will reflect the development over time of meaningful and effective working relationships with willing Aboriginal peoples. As detailed in the Monitoring section below, annual reporting will include a qualitative as well as quantitative aspect to attempt to convey the development of long-term relationships.
<b>Current Status, Predicted</b>	The following table shows the current status of evidence of best efforts to share interests

<p>Results or Outcome</p>	<p>and plans with Aboriginal communities.</p> <table border="1" data-bbox="477 275 1377 1066"> <thead> <tr> <th data-bbox="477 275 768 331">Aboriginal Community</th> <th colspan="2" data-bbox="768 275 1377 331">2012/13 Status</th> </tr> <tr> <td data-bbox="477 331 768 394"></td> <th data-bbox="768 331 995 394"># of Plans Shared</th> <th data-bbox="995 331 1377 394">Forms of Communication Initiated</th> </tr> </thead> <tbody> <tr> <td data-bbox="477 394 768 489">Lheidli T'enneh First Nation</td> <td data-bbox="768 394 995 489">12</td> <td data-bbox="995 394 1377 489">Mailed letters &amp; packages, emails, phone, face-to-face meetings</td> </tr> <tr> <td data-bbox="477 489 768 583">McLeod Lake Indian Band</td> <td data-bbox="768 489 995 583">8</td> <td data-bbox="995 489 1377 583">Mailed letters &amp; packages, emails, phone, face-to-face meetings</td> </tr> <tr> <td data-bbox="477 583 768 678">Nak'azdli Band</td> <td data-bbox="768 583 995 678">8</td> <td data-bbox="995 583 1377 678">Mailed letters &amp; packages, emails, phone, face-to-face meetings</td> </tr> <tr> <td data-bbox="477 678 768 772">Nazko Band</td> <td data-bbox="768 678 995 772">3</td> <td data-bbox="995 678 1377 772">Mailed letters &amp; packages, emails, phone, face-to-face meetings</td> </tr> <tr> <td data-bbox="477 772 768 846">Saik'uz First Nation</td> <td data-bbox="768 772 995 846">3</td> <td data-bbox="995 772 1377 846">Letter, email</td> </tr> <tr> <td data-bbox="477 846 768 909">Halfway River First Nation</td> <td data-bbox="768 846 995 909">3</td> <td data-bbox="995 846 1377 909">Letter, email</td> </tr> <tr> <td data-bbox="477 909 768 993">West Moberly First Nations</td> <td data-bbox="768 909 995 993">7</td> <td data-bbox="995 909 1377 993">Mailed letters &amp; packages, emails, phone, face-to-face meetings</td> </tr> <tr> <td data-bbox="477 993 768 1066">Prince George Métis Community Association</td> <td data-bbox="768 993 995 1066">Communications not yet initiated</td> <td data-bbox="995 993 1377 1066"></td> </tr> </tbody> </table>	Aboriginal Community	2012/13 Status			# of Plans Shared	Forms of Communication Initiated	Lheidli T'enneh First Nation	12	Mailed letters & packages, emails, phone, face-to-face meetings	McLeod Lake Indian Band	8	Mailed letters & packages, emails, phone, face-to-face meetings	Nak'azdli Band	8	Mailed letters & packages, emails, phone, face-to-face meetings	Nazko Band	3	Mailed letters & packages, emails, phone, face-to-face meetings	Saik'uz First Nation	3	Letter, email	Halfway River First Nation	3	Letter, email	West Moberly First Nations	7	Mailed letters & packages, emails, phone, face-to-face meetings	Prince George Métis Community Association	Communications not yet initiated	
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Prince George Métis Community Association	Communications not yet initiated																														
<p><b>Forecast</b></p>	<p>Forest management and operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local Aboriginals.</p>																														
<p><b>Target</b></p>	<p>≥3 approaches/Aboriginal community within the DFA, for 100% of management plans, as required.</p>																														
<p>Basis for the Target</p>	<p>Legal obligations and alignment with Canfor's Environmental Policy and SFM Commitments.</p>																														
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>N/A</p>																														
<p>Annual</p>	<p>Retain a record of the Aboriginal communities whose asserted traditional territory overlaps with the DFA for the purpose of communication with affected Aboriginal communities by the licensee.</p> <p>Report by the licensee for blocks harvested during the reporting period the number of applicable forest management plans pertaining to Crown tenures held by the company within the DFA and the number of those where open communication to describe and obtain acceptance occurred. Annual reporting will address "best efforts" by providing detail about the number of plans, forms of communication initiated, and summary of interests/concerns. "Acceptance" will be reported by highlighting the comments received from Aboriginal communities that take exception to the management plans. "Clear understanding" is difficult to measure but will be measured as part of the continuum of relationship-building between the licensee and Aboriginal communities, and will be a qualitative measure based on the summary of interests and concerns.</p>																														

Variance	None
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***5.7.25 6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur***

<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>Indicator Statement(s)</b>	6.1.3 - Percent of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses, communicated through information-sharing and cultural heritage evaluations.
<b>Element(s)</b>	6.1 Aboriginal and Treaty Rights
<b>Value(s) and Objective(s)</b>	Value 6.1: Aboriginal title and rights and treaty rights. <u>Objective 6.1</u> : Recognition and respect for Aboriginal title and rights and treaty rights.
<b>Strategies</b> Description	<p>Meaningful relationships and open communication with local Aboriginal communities help ensure that areas of cultural importance are managed in a way that retains their traditions and values. This indicator recognizes the importance of managing and protecting culturally important practices and activities during forestry operations. Aboriginals, with the benefit of local and traditional knowledge, may provide valuable information concerning the specific location and use of these sites as well as the specific forest characteristics requiring protection or management. The outcome of these discussions, and the means to manage/protect values and uses, are included in operational plans. The intent of the indicator statements are to manage and/or protect those truly important sites; thus, there is a degree of reasonableness in identifying the sites. The targets verify that consideration was given in plans, then follows through with assessing plan execution.</p> <p>This indicator closely aligns with Indicators 1.4.2 Protection of identified sacred and culturally important sites and 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.</p>
Means of Achieving Objective & Target	<p>Efforts have been made to understand which First Nation traditional territories fall within the Plan area and company Defined Forest Areas. Information sharing agreements are made with willing Aboriginal communities to promote the use and protection of sensitive information. Forest management plans are shared with Aboriginal communities. Open communication with Aboriginals includes a sharing of information and will enable the forest licensee to understand and incorporate traditional knowledge into operational plans. The Licensee is aware of culturally important, sacred and spiritual sites leading to their appropriate management and/or protection. Once incorporated, operational plans are properly executed. Post harvest evaluations and other inspections assess plan conformance. Consultation records are completed for each block and road. There is a record of the Aboriginals involved, the comments received, the level of consultation carried out and any adjustment to strategies or accommodation made as a result of this consultation.</p> <p>All cut blocks and roads have a Cultural Heritage Resource (CHR) assessment completed.</p>

<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>The following table shows the current status of the % of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses communicated through information-sharing and cultural heritage evaluations.</p> <table border="1" data-bbox="526 306 1330 499"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>98.7%</td> <td>100%</td> <td>100%</td> </tr> <tr> <td>TFL30</td> <td>N/A*</td> <td>N/A*</td> <td>100%</td> </tr> </tbody> </table> <p>* no harvest occurred during the reporting period</p>		2008/09 Status	2009/10 Status	2010/11 Status	PG	98.7%	100%	100%	TFL30	N/A*	N/A*	100%
	2008/09 Status	2009/10 Status	2010/11 Status										
PG	98.7%	100%	100%										
TFL30	N/A*	N/A*	100%										
<p><b>Forecast</b></p>	<p>Open and meaningful relationships with local Aboriginals leading to a trust in sharing sensitive information.</p> <p>Operational plans contain information on how these sites will be managed or protected. Forest operations that properly execute the site level plan.</p>												
<p><b>Target</b></p>	<p>100% compliance with operational plans</p>												
<p>Basis for the Target</p>	<p>Legal obligations, alignment with Canfor’s SFM Commitments.</p>												
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>N/A</p>												
<p>Annual</p>	<p>Number of roads constructed or cut blocks harvested where operational plans had specific content requirements to manage or protect Aboriginal forest values, knowledge and uses.</p> <p>Retain a record of the Aboriginal communities whose traditional territory (any part) overlaps with the DFA for the purpose of communication with affected parties.</p> <p>Retain a record demonstrating that forest management plans within the DFA were shared/discussed with Aboriginal communities.</p> <p>Report: Number of instances where discussions lead to the identification of Aboriginal forest values, knowledge and use that required specific management or protection.</p> <p>Where the above occurred, report the number of times where operational plans specified how these values were considered. Report the number of requests and efforts to accommodate.</p>												
<p>Variance</p>	<p>0%</p>												

[Element 6.2 Respect for Aboriginal Forest Values, Knowledge, and Uses]

The indicator for Element 6.2 is covered under indicator 1.4.2 (above).



**5.7.26 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>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>Indicator Statement(s)</b>	6.3.1(a) - Primary and by-products that are bought, sold, or traded with other forest-dependent businesses in the local area.																					
<b>Element(s)</b>	6.3 Forest Community Well-Being and Resilience																					
<b>Value(s) and Objective(s)</b>	<u>Value 6.3:</u> Community well-being <u>Objective 6.3:</u> Provide/support opportunities for maintaining a resilient and stable community.																					
<b>Strategies Description</b>	An economically and socially diverse community is often more sustainable in the long-term with its ability to weather market downturns of a particular sector. Support of efforts to increase diversity, the establishment of other enterprises and co-operation with other forest-dependent businesses and forest users is desirable.  Support for local communities through business relationships (defined for this indicator as purchases, sales, or trading of primary forest products and forest by-products) provides employment diversification and increased local revenue.  For the purposes of this target, local area is defined as including communities from 100 Mile House to Mackenzie (south to north) and from Smithers to McBride (west to east).																					
<b>Means of Achieving Objective &amp; Target</b>	The participating licensee seeks and maintains active, mutually beneficial business relationships (purchases, sales, or trade arrangements) with other forest products businesses within or in the immediate vicinity of the DFA. Examples of primary products include logs, lumber, plywood, strand board, and pulp. Examples of by-products include chips, sawdust, shavings, hog fuel and trim blocks.																					
<b>Current Status, Predicted Results or Outcome</b>	The following table summarizes Canfor's performance for 2011, to set the initial target. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Product</th> <th>Number of opportunities</th> <th>Organization</th> </tr> </thead> <tbody> <tr> <td>Log Sales</td> <td>5</td> <td>West Fraser, 550031 BC Ltd., Kermod Forest Products, Stella Jones, Dunkley Lumber</td> </tr> <tr> <td>Log Purchase</td> <td>5</td> <td>Peter van der Merwe, Homewood Pacific, All-Wood Fibre Ltd., Dollar Saver Lumber Ltd., Edgewater Holdings, 0774748 BC Ltd., Spectra Energy</td> </tr> <tr> <td>Pulp Log Purchase</td> <td>3</td> <td>0779140 BC Ltd., Nordic Forest Ltd., TDB Consultants Inc.</td> </tr> <tr> <td>Residual Fibre (Hog)</td> <td>2</td> <td>Edgewater Holdings Ltd., Pine Star Logging Ltd.</td> </tr> <tr> <td>Chips</td> <td>1</td> <td>Canfor Pulp Limited Partnership</td> </tr> <tr> <td>Total</td> <td>15</td> <td></td> </tr> </tbody> </table>	Product	Number of opportunities	Organization	Log Sales	5	West Fraser, 550031 BC Ltd., Kermod Forest Products, Stella Jones, Dunkley Lumber	Log Purchase	5	Peter van der Merwe, Homewood Pacific, All-Wood Fibre Ltd., Dollar Saver Lumber Ltd., Edgewater Holdings, 0774748 BC Ltd., Spectra Energy	Pulp Log Purchase	3	0779140 BC Ltd., Nordic Forest Ltd., TDB Consultants Inc.	Residual Fibre (Hog)	2	Edgewater Holdings Ltd., Pine Star Logging Ltd.	Chips	1	Canfor Pulp Limited Partnership	Total	15	
Product	Number of opportunities	Organization																				
Log Sales	5	West Fraser, 550031 BC Ltd., Kermod Forest Products, Stella Jones, Dunkley Lumber																				
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Chips	1	Canfor Pulp Limited Partnership																				
Total	15																					
<b>Forecast</b>	Support for local communities through business relationships provides employment diversification and increased local revenue.																					

<b>Target</b>	Increasing number of purchase/sale/trade relationships.
Basis for the Target	Business initiatives and relationships built on sound principles are not only beneficial to the partners, but also to the economy and vitality of communities within and adjacent to the DFA.
<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	Report on the number of purchase, sale or trade relationships with other forest dependant businesses within or in the vicinity of the DFA. Tracking is the number of relationships, not the number of transactions within each relationship.
Variance	+

*5.7.27 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.*

*6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved*

<b>Indicator(s)</b>	<p><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></p> <p><b>6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved</b></p>
<b>Indicator Statement(s)</b>	6.3.2 - Implementation and maintenance of a certified safety program.
<b>Element(s)</b>	6.3 Forest Community Well-Being and Resilience
<b>Value(s) and Objective(s)</b>	<p><u>Value 6.3:</u> Community well-being</p> <p><u>Objective 6.3:</u> Provide/support opportunities for maintaining a resilient and stable community.</p>
<b>Strategies</b> Description	<p>Canfor’s first measure of success is the health and safety of our people. This philosophy is embraced and promoted from the mill floor to the executive offices. This commitment is reflected in the work practices and safety programs employed at all worksites.</p> <p>Canfor implements their safety programs by assigning responsibilities to managers, supervisors and employees as follows:</p> <p>Management:</p> <ul style="list-style-type: none"> <li>• Develop and maintain a comprehensive occupational health and safety program;</li> <li>• Conduct regular health and safety audits and implement appropriate action steps;</li> <li>• Facilitate active employee participation in health and safety initiatives and programs; and</li> <li>• Provide the necessary education and training in safe work practices and procedures for supervisors, OH&amp;S committee members, and all employees.</li> </ul> <p>Supervisors:</p> <ul style="list-style-type: none"> <li>• Ensure that all employees under their direction receive proper training and instruction and that all work is performed safely;</li> <li>• Ensure that employees are made aware of all known or reasonably foreseeable health or safety hazards in the areas where they work; and</li> <li>• Initiate actions and follow-up in order to maintain a healthy and safe working environment within their areas of responsibility.</li> </ul> <p>Employees:</p> <ul style="list-style-type: none"> <li>• Take responsibility for avoiding risk to themselves and others and following all known safe work rules, procedures and instructions; and</li> <li>• Eliminate all accidents by working together to identify any potential hazards in the workplace and to take the appropriate corrective action.</li> </ul> <p>All of Canfor’s forest operations are third party certified to a safety program that meets or exceeds provincial safety programs - SAFE Company in BC.</p>

Means of Achieving Objective & Target	Forest operations retain their safety program certification.
<b>Current Status,</b> Predicted Results or Outcome	Forest organizations who safely execute their work assignments. Canfor's safety program was initially third party certified in 2009.
<b>Forecast</b>	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. In Alberta, companies who have joined PIR and obtained a Certificate of Recognition have 20% fewer WCB lost time claims. Companies who conduct work that meet their certified safety program requirements demonstrate the efforts to make safety integral to each worker's life, and that unsafe is unacceptable.
<b>Target</b>	100%
Basis for the Target	Continuously improve forest worker safety record.
<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	Report whether third-party safety certification has been maintained on the DFA. Report any accidents and fatalities.
Variance	0%

*5.7.28 6.4.1 Level of participant satisfaction with the public participation process*

<b>Indicator</b>	<b>6.4.1 Level of participant satisfaction with the public participation process</b>
<b>Indicator Statement(s)</b>	6.4.1 - PAG established and maintained, and satisfaction survey implemented according to the Terms of Reference.
<b>Element(s)</b>	6.4 Fair and Effective Decision-Making
<b>Value(s) and Objective(s)</b>	<u>Value 6.4:</u> Public participation in decision making processes. <u>Objective 6.4.1:</u> A clear process for a wide public participation in SFM.
<b>Strategies</b> Description	<p>The public participation process is a process of engagement that incorporates a diversity of values into SFM. Implementation of a public participation process as outlined in the CSA standard gives the public an opportunity to be involved proactively in the management of a defined forest area (DFA). An effective public participation process accommodates the public's wide range of knowledge, interests, and involvement with regard to SFM, as well as differing cultural and economic ties to the forest. The SFM Public Advisory Group was established to assist the participating licensee in:</p> <ul style="list-style-type: none"> <li>• Developing and reviewing the SFM Plan;</li> <li>• Identifying and selecting values, objectives, indicators, and targets based on SFM elements and issues of relevance to the DFA;</li> <li>• Developing, assessing and selecting one or more possible strategies;</li> <li>• Designing monitoring programs, evaluating results and recommending improvements; and</li> <li>• Discussing and resolving any issues relevant to SFM in the DFA.</li> </ul> <p>The SFM Plan is an evolving document that will be reviewed for effectiveness and revised as needed with the assistance of the Public Advisory Group to address changes in forest condition and local community values. Ensuring the continuing interest and participation of the PAG is an integral part of a dynamic and responsive SFM Plan. The ability of people to share information, discuss and solve problems, and set and meet objectives is key to achieving and maintaining meaningful public participation.</p>
Means of Achieving Objective & Target	<p>At the end of each Public Advisory Group meeting, participating licensees will provide all Public Advisory Group members in attendance a feedback form (survey) to assess their satisfaction with the meeting and associated process. The survey content and process will be that described in the Public Advisory Group's Terms of Reference. All survey questions will have a 1-5 scoring assessment (1 being very poor, 2 being poor, 3 being average, 4 being good and 5 being very good).</p> <p>The results of the surveys will be collated and reviewed at the subsequent Public Advisory Group meeting with any corresponding actions or recommendations. The results of all surveys completed will be summarized to determine an overall average score for a PAG meeting as well as the average overall score for all meetings that fall within a reporting period. When the average scoring assessment for a PAG meeting falls below 4, corrective action will be developed in conjunction with the PAG.</p>

<p><b>Current Status, Predicted Results or Outcome</b></p>	<p>The following table shows a summary of the average meeting satisfaction score based on responses received.</p> <table border="1" data-bbox="526 275 1333 468"> <thead> <tr> <th></th> <th>2008/09 Status</th> <th>2009/10 Status</th> <th>2010/11 Status</th> </tr> </thead> <tbody> <tr> <td>PG</td> <td>4.4</td> <td>4.1</td> <td>4.2</td> </tr> <tr> <td>TFL30<sup>1</sup></td> <td>4.3</td> <td>4.6</td> <td>4.3</td> </tr> </tbody> </table> <p><sup>1</sup> as of October 10, 2010 the TFL30 and PG PAGs merged into one PAG</p>		2008/09 Status	2009/10 Status	2010/11 Status	PG	4.4	4.1	4.2	TFL30 <sup>1</sup>	4.3	4.6	4.3
	2008/09 Status	2009/10 Status	2010/11 Status										
PG	4.4	4.1	4.2										
TFL30 <sup>1</sup>	4.3	4.6	4.3										
<p><b>Forecast</b></p>	<p>Active and engaged Public Advisory Group.</p>												
<p><b>Target</b></p>	<p>PAG meeting satisfaction score of <math>\geq 4</math></p>												
<p>Basis for the Target</p>	<p>Ensure issues are identified in a timely manner, discussed and, where possible, resolved. Public Advisory Group process is being continuously improved.</p>												
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	<p>Periodic monitoring and measurement will be completed for each PAG meeting conducted within a given reporting period. The satisfaction score for a meeting will be determined and presented to the PAG at a subsequent meeting. The results will be discussed, opportunities will be reviewed and action plans will be developed when the overall average PAG meeting satisfaction score falls below 4.</p>												
<p>Annual</p>	<p>Annual monitoring and measurement will entail summarizing the overall PAG meeting satisfaction score for all meetings that fall within a given reporting period to arrive at an overall score for the year. This will be for monitoring purposes only given that opportunities and actions plans have already been completed as part of the meeting summaries.</p>												
<p>Variance</p>	<p>0</p>												

***5.7.29 6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general***

<b>Indicator</b>	<b>6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general</b>								
<b>Indicator Statement(s)</b>	6.4.2 - Number of educational opportunities for information/training that are delivered to the PAG.								
<b>Element(s)</b>	6.4 Fair and Effective Decision-Making								
<b>Value(s) and Objective(s)</b>	Value 6.4: Public participation in decision making processes. Objective 6.4.2: A clear process for a wide public participation in SFM.								
<b>Strategies</b> Description	<p>The ability of people to share information, discuss and solve problems, and set and meet objectives is critical to achieving and maintaining meaningful public participation within the context of forest management and the CSA public participation process. Many types of capacity development initiatives can be used to help achieve meaningful public participation.</p> <p>This indicator recognizes the importance of providing information and/or training opportunities for members of the public advisory group that in turn contributes to a more knowledgeable and effective Public Advisory Group (PAG). Examples of educational opportunities could include field trips and guest presentations on a particular topic of interest to the PAG. Members of the public provide local knowledge that contributes to the achievement of socially and environmentally responsible forest management. At times, public members may feel limited in their ability to contribute to discussions because they may lack the required technical forestry knowledge. Broadening this knowledge base enables better dialogue and helps contribute to balanced decisions and an SFM Plan acceptable to the majority of the affected public.</p>								
Means of Achieving Objective & Target	Participating licensees are committed to work with members of the PAG on forest management issues and to improve the effectiveness of the public processes through capacity development. Licensees will provide informational/educational opportunities for PAG participants on an annual basis as part of regularly held meetings.								
<b>Current Status, Predicted Results or Outcome</b>	<p>The following table shows a summary of the number of educational opportunities for information/training delivered to the PAG.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">2009/10 Status</th> <th style="width: 33%;">2010/11 Status</th> <th style="width: 33%;">2011/12 Status</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> <li>• Two (2) opportunities: Q&amp;A session with Dave Bebb, KPMG auditor; Dr. Howie Harshaw, UBC – Public Opinion Survey results</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• Two (2) opportunities: Jeff Burrows, MNRO – PG TSA TSR 4; and Dr. Greg Halseth, Canada Research Chair in Rural and Small Town Studies, UNBC – community development.</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• Three (3) opportunities: Jim McCormack, Canfor – Canfor’s Biodiversity Strategy; Neil Spendiff, Canfor - Brushing Treatments and use of Herbicides; Vince Day, Canfor - Seedling genetic diversity;</li> </ul> </td> </tr> </tbody> </table>			2009/10 Status	2010/11 Status	2011/12 Status	<ul style="list-style-type: none"> <li>• Two (2) opportunities: Q&amp;A session with Dave Bebb, KPMG auditor; Dr. Howie Harshaw, UBC – Public Opinion Survey results</li> </ul>	<ul style="list-style-type: none"> <li>• Two (2) opportunities: Jeff Burrows, MNRO – PG TSA TSR 4; and Dr. Greg Halseth, Canada Research Chair in Rural and Small Town Studies, UNBC – community development.</li> </ul>	<ul style="list-style-type: none"> <li>• Three (3) opportunities: Jim McCormack, Canfor – Canfor’s Biodiversity Strategy; Neil Spendiff, Canfor - Brushing Treatments and use of Herbicides; Vince Day, Canfor - Seedling genetic diversity;</li> </ul>
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<b>Forecast</b>	Public participation in forest planning and operations that is open, inclusive and responsive to public concerns and grounded in science.								
<b>Target</b>	≥ 2 (annual)								
Basis for the Target	Additional knowledge provides for better dialogue and ultimately better decisions.								

<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	Report the number of educational opportunities that were presented to the public advisory group during the reporting period. PAG meeting minutes will contain supporting documentation specific to the educational opportunity discussed.
Variance	None



[Element 6.4 Fair and Effective Decision-Making]

Core Indicator 6.4.3 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans is covered under Indicator 6.1.2 (above).

**5.7.30 6.5.1 Number of people reached through educational outreach**

<b>Indicator</b>	<b>6.5.1 Number of people reached through educational outreach</b>																										
<b>Indicator Statement(s)</b>	6.5.1 - The number of people who attend the educational opportunities provided																										
<b>Element(s)</b>	6.5 Information for Decision-Making																										
<b>Value(s) and Objective(s)</b>	<p><u>Value 6.5:</u> Informed, fair and inclusive decision-making.</p> <p><u>Objective 6.5:</u> Provide relevant information and educational opportunities to support involvement in public participation processes.</p>																										
<b>Strategies</b> Description	<p>The participating licensee is committed to working with directly affected stakeholders and members of the public on forest management issues and has a well-established history of participation in community meetings, including local planning processes. The sharing of knowledge with affected stakeholders contributes to informed, balanced decisions and plans acceptable to the majority of public. When informed and engaged, members of the public can provide local knowledge and support that contributes to socially and environmentally responsible forest management within the DFA.</p>																										
<b>Means of Achieving Objective &amp; Target</b>	<p>The participating licensee will maintain their involvement in educational outreach initiatives. Examples of educational outreach initiatives include:</p> <ul style="list-style-type: none"> <li>• Maintaining an open and active public advisory group,</li> <li>• Field tours, and open houses,</li> <li>• Notification/referrals to stakeholders,</li> <li>• School classroom visits,</li> <li>• Continual improvement projects,</li> <li>• Knowledge transfer sessions,</li> <li>• Participation in trade shows,</li> <li>• Regional District presentations, and</li> <li>• Forestry tours.</li> </ul> <p>The participating licensee will work with the PAG (and others) to identify more opportunities over time.</p>																										
<b>Current Status, Predicted Results or Outcome</b>	<p>The following table shows a summary of the number of people who attend the educational opportunities provided by Canfor (2012 Baseline)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Types of Opportunities</th> <th style="text-align: center;"># of opportunities</th> <th style="text-align: center;"># of attendees</th> </tr> </thead> <tbody> <tr> <td>PAG field tour</td> <td></td> <td></td> </tr> <tr> <td>PAG meeting presentations</td> <td style="text-align: center;">4</td> <td style="text-align: center;">70</td> </tr> <tr> <td>COFI Natural Resources Management Camp for high school students</td> <td style="text-align: center;">1</td> <td style="text-align: center;">35</td> </tr> <tr> <td>Yellowhead Rotary Club’s “Adventures in Forestry” program for high school students</td> <td style="text-align: center;">1</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Public viewing</td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td style="text-align: center;">1</td> <td style="text-align: center;">30</td> </tr> <tr> <td><b>Total opportunities</b></td> <td style="text-align: center;"><b>7</b></td> <td style="text-align: center;"><b>165</b></td> </tr> </tbody> </table>			Types of Opportunities	# of opportunities	# of attendees	PAG field tour			PAG meeting presentations	4	70	COFI Natural Resources Management Camp for high school students	1	35	Yellowhead Rotary Club’s “Adventures in Forestry” program for high school students	1	30	Public viewing			Other	1	30	<b>Total opportunities</b>	<b>7</b>	<b>165</b>
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<b>Total opportunities</b>	<b>7</b>	<b>165</b>																									
<b>Forecast</b>	An educated and informed public with a broad understanding of forestry that can provide local input and support on matters pertaining to forest planning and operations.																										
<b>Target</b>	≥200 people and ≥4 events																										

Basis for the Target	Aligns with Canfor's Environmental Policy and SFM Commitments.
<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	Track and report the number of educational opportunities provided. Record attendance level at each meeting or tour (public and stakeholders). Provide a description of each type of opportunity in the Annual Report.
Variance	-10

***5.7.31 6.5.2 Availability of summary information on issues of concern to the public***

<b>Indicator</b>	<b>6.5.2 Availability of summary information on issues of concern to the public</b>
<b>Indicator Statement(s)</b>	6.5.2 - SFM Annual report made available to the public.
<b>Element(s)</b>	6.5 Information for Decision-Making
<b>Value(s) and Objective(s)</b>	<u>Value 6.5:</u> Informed, fair and inclusive decision-making <u>Objective 6.5:</u> Provide relevant information and educational opportunities to support involvement in public participation processes.
<b>Strategies</b> Description	This indicator recognizes the importance of keeping members of the public informed on forestry strategies being developed, planning occurring in their area and results from forest management activities. Issues of concern brought forward by the public are part of the discussions occurring at public advisory group meetings and often work their way into a reporting requirement in the SFM Plan or an action in SFM monitoring reports. Annual reporting of the Plan's performance measures to the advisory group and to the broader public provides an open and transparent means of demonstrating how issues of concern are being managed. It provides the public with an opportunity to respond to results and associated actions outlined in the annual SFM Monitoring report and make recommendations for improvement. Members of the public can provide local knowledge that contributes to socially and environmentally responsible forest management.
Means of Achieving Objective & Target	The Licensee maintains an external website that makes the SFM monitoring report publicly available.
<b>Current Status, Predicted Results or Outcome</b>	External websites containing the annual SFM monitoring report have been maintained since 2001. <a href="http://www.sfmngtsa.com">http://www.sfmngtsa.com</a> <a href="http://www.canfor.com/responsibility/environmental/certification">http://www.canfor.com/responsibility/environmental/certification</a>
<b>Forecast</b>	Public awareness and understanding of the SFM Plan and annual performance relative to the Plan's targets. A continuously improving SFM Plan that has openly informed, included and responded to the public.
<b>Target</b>	SFM monitoring report available to public annually via the Web.
Basis for the Target	Provides topical information to the local public as well as a worldwide audience. Has contact mechanism for those looking for additional information.
<b>Monitoring &amp; Measurement</b> Periodic	N/A
Annual	Report a yes/no answer as to whether the annual monitoring report was made publicly available on an external website (or in hard copy format for interested parties unable to access the internet) by December 31 of each year.
Variance	None

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## **6.0 LINKS TO OTHER PLANNING PROCESSES**

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### **6.1 Strategic Plans**

#### Prince George Land and Resource Management Plan (LRMP)

The Government of British Columbia announced the Prince George Land and Resource Management Plan (LRMP) in January 1999. The LRMP addressed the long-term balance of the environment and economy in the District. It provided access to timber for the local forest industry, certainty for the mining, ranching and tourism industries while also establishing conservation and recreation objectives for many natural values in the District. The stability and security provided by the plan ensures economic and social stability and increased opportunities for growth and investment throughout the region.

### **6.2 Plans, Policies and Strategies That Relate to the SFM Plan**

#### The Forest Stewardship Plan

Licensees are required to prepare a Forest Stewardship Plan (FSP) in place of the former Forest Development Plan (FDP). Resource management objectives are set by Government, the Forest and Range Practices Act or by regulation. Forest Stewardship Plans describe the intended results a licensee commits to achieving, or the strategies that the licensee will use, in relation to these established resource management objectives. Licensees are not required to indicate where cut blocks will be located and how harvesting and reforestation will be carried out in FSPs. Licensees are required to prepare a site plan for planned cut blocks and roads prior to harvesting. A site plan must identify the approximate location of cut blocks 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.

#### Canfor's Sustainable Forest Management Commitments

The Sustainable Forest Management Commitments are based on the tenets of accountability, continuous improvement, Aboriginal and public involvement and third party verification of performance. Canfor views these commitments as a fundamental component in improving its existing sustainable forest management practices, ensuring the transparency of its operations and fulfilling sustainable forest management certification requirements. The Sustainable Forest Management Commitments are found at the beginning of this document.

#### Canfor's Environmental Management Systems

An Environmental Management System (EMS) is a management tool that enables an organization to control the impacts of its activities, products or services on the environment. It is a structured approach for setting and achieving environmental objectives and targets, and for demonstrating that they have been achieved. The EMS requires an organization to have in place the mechanisms, policies and structure to comply with environmental legislation and regulations and to evaluate such mechanisms, policies and structure with the objective of continual improvement.

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies from 130 countries. This non-governmental organization was established in 1947 to promote the standardization of related economic activities around the world. In 1996, ISO developed an international standard for environmental management systems: ISO 14001. This standard was subsequently updated in 2004.

The Environmental Management Systems for Canfor's woodlands operations received certification to ISO 14001 following an audit from independent registrars. The EMS standardizes woodlands environmental management for the identified woodlands operations and will help to ensure environmental performance

improves over time. Canfor recognizes that the ISO 14001 standard is an essential step in achieving independent recognition of our commitment to sustainable forest management.

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## LIST OF ACRONYMS

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AAC: Allowable Annual Cut  
BCTS: BC Timber Sales  
BEC: Biogeoclimatic Ecosystem Classification  
CHR: Cultural Heritage Resource  
CO<sub>2</sub>: Carbon Dioxide  
COSEWIC: Committee on the Status of Endangered Wildlife in Canada  
CSA: Canadian Standards Association  
CWD: Coarse Woody Debris  
DFA: Defined Forest Area  
ECA: Equivalent Clearcut Area  
EMS: Environmental Management System  
ESA: Environmentally Sensitive Area  
ESSF: Engelmann Spruce-Subalpine Fir  
FDP: Forest Development Plan  
FMLB: Forest Management Land Base  
FPPR: Forest Planning and Practices Regulation  
FREP: Forest and Range Evaluation Program  
FRPA: Forest and Range Practices Act  
FSP: Forest Stewardship Plan  
FSR: Forest Service Road  
FSW: Fisheries Sensitive Watersheds  
GAR: Government Actions Regulation  
GWM: General Wildlife Measures  
ICH: Interior Cedar Hemlock  
ISO: International Organization for Standardization  
LLOWG: Licensee Landscape Objectives Working Group  
LRMP: Land and Resource Management Plan  
MARR: BC Ministry of Aboriginal Relations and Reconciliation  
MFLNRO: BC Ministry of Forests, Lands and Natural Resource Operations  
MOE: BC Ministry of Environment  
MPB: Mountain Pine Beetle  
MSRM: Ministry of Sustainable Resource Management  
NAR: Net Area to be Reforested  
NDT: Natural Disturbance Type  
NDU: Natural Disturbance Unit  
NHLB: Non – Harvestable Land Base  
NRFL: Non-Replaceable Forest License  
OGMA: Old Growth Management Area  
PAG: Public Advisory Group  
PAS: Protected Area Strategy  
PEFC: Programme for the Endorsement of Forest Certification  
PEM: Predictive Ecosystem Mapping  
PFI: Peak Flow Index  
PIR: Partners in Injury Reduction  
PL: Lodgepole Pine  
RAAD: Remote Access to Archaeological Data  
RPF: Registered Professional Forester

SARA: Federal Species at Risk Act  
SBS: Sub-Boreal Spruce  
SFM: Sustainable Forest Management  
SFMP: Sustainable Forest Management Plan  
SIBEC: Site Index Estimates by Site Series  
SU: Standards Unit  
THLB: Timber Harvesting Land Base  
TOR: Terms of Reference  
TSA: Timber Supply Area  
TSR: Timber Supply Review  
TUS: Traditional Use Study  
UWR: Ungulate Winter Range  
VIA: Visual Impact Assessment  
VOIT: Values, Objectives, Indicators, Targets  
VQO: Visual Quality Objective  
WCB: Workers' Compensation Board  
WHA: Wildlife Habitat Areas  
WTP: Wildlife Tree Patch



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## GLOSSARY

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**Abiotic** – pertaining to the non-living component of the environment (e.g., climate, ice, soil and water). (Canadian Council of Forest Ministers)

**Aboriginal** – “Aboriginal peoples of Canada” [which] include Indian, Inuit, and Métis peoples of Canada (Constitution Act 1992, Subsection 35(2)). (CSA Z808-96)

**Abundance** – the number of organisms in a population, combining density within inhabited areas with number and size of inhabited areas. (Canadian Council of Forest Ministers)

**Access Management Plan** - An operational plan that shows how road construction, modification and deactivation will be carried out to protect, or mitigate impacts on, known resources or sensitive areas, while maximizing the efficacy of forest resource development.

**Access Structures** - a structure, including a road, bridge, landing, gravel pit or other similar structure that provides access for forest management such as harvesting.

**Adaptive Management (AM)** – a systematic, rigorous approach to improving management and accommodating change by learning from the outcomes of management interventions. (BC Ministry of Forests - Forest Practices Management Branch)

**Age Class** – any interval of time into which the age range of trees, forests, stands or forest types is decided for classification and use. (BC Ministry of Forests)

**Agriculture Land (High Value)** – parcels of land, which, based on soil and climate capability hearings, are deemed necessary to be maintained for agricultural use. (Common Usage)

**Allowable Annual Cut (AAC)** – the allowable rate of timber harvest from a specified area of land. British Columbia’s Chief Forester sets AACs for timber supply areas (TSAs) and tree farm licenses (TFLs) in accordance with Section 8 of the BC Forest Act. (BC Ministry of Forests)

**Analysis Units** – the basic building blocks around which inventory data and other information are organized for use in forest planning models. Typically, these involve specific tree species or type groups that are further defined by site class, geographic location or similarity of management regimes. (BC MoF Website Glossary)

**Aquatic** – consisting of, relating to, or being in water. (The American Heritage Dictionary of the English Language, Third Edition)

**Apportionment** – the distribution of the AAC for a TSA among timber tenures by the Minister in accordance with Section 10 of the *Forest Act*. (BC MoF Website Glossary)

**Backlog** – a Ministry of Forests term applied to forest land areas where silviculture treatments such as planting and site preparation are overdue. Planting is considered backlog if more than 5 years have elapsed since a site was cleared (by harvesting or fire) in the interior and more than 3 years on the coast of British Columbia. (BC MoF Website Glossary)

**Basic silviculture** – harvesting methods and silviculture operations including seed collecting, site preparation, artificial and natural regeneration, brushing, spacing and stand tending, and other operations that are for the purpose of establishing a free growing crop of trees of a commercially valuable species and are required in a regulation, pre-harvest silviculture prescription or silviculture prescription. (BC MoF Website Glossary)

**Best Management Practices** – a practice or combination of practices that are determined to be the most technologically or economically feasible means of preventing or managing potential impacts. (Best Management Practices Handbook: Hillslope Restoration in British Columbia; Watershed

Restoration Technical Circular No.3 (revised); May 2000; Watershed Restoration Program, BC MoF)

**Biodiversity (or biological diversity)** – the variability among living organisms from all sources including *inter alia* terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (Canadian Biodiversity Strategy 1995) (CSA Z808-96)

**Biogeoclimatic ecosystem classification (BEC)** – a hierarchical classification system scheme having three levels of integration: regional, local and chronological; and combining climatic, vegetation and site factors. (BC Ministry of Forests)

**Biogeoclimatic zone** – a large geographic area with a broadly homogenous macroclimate. Each zone is named after one or more of the dominant climax species of the ecosystems in the zone, and a geographic or climatic modifier. British Columbia has 14 biogeoclimatic zones. (BC Ministry of Forests)

**Biota** – all of the living organisms in given ecosystem, including microorganisms, plants and animals. (Canadian Council of Forest Ministers)

**Biological Richness (species richness)** – Species presence, distribution, and abundance in a given area.

**Biomass** – The total dry weight or volume of all or part of a tree.

**Biotic** – pertaining to any living aspect of the environment, especially population or community characteristics. (Canadian Council of Forest Ministers)

**Blowdown (windthrow)** – uprooting by the wind. Also refers to a tree or trees so uprooted. (BC MoF Website Glossary)

**Carbon Cycle** – The storage and cyclic movement of organic and inorganic forms of carbon between the biosphere, lithosphere, hydrosphere, and atmosphere.

**Carbon Sink** - Forests and other ecosystems that absorb carbon, thereby removing it from the atmosphere and offsetting CO<sub>2</sub> emissions.

**Coarse-filter Ecosystem Group** - Is the outcome of grouping site series that have relative similarities of their indicator plant communities. This term is also referred to habitat types in the SFM Plan.

**Coarse Woody Debris (CWD)** – Dead woody material of a minimum diameter or greater, either resting on the forest floor or at an angle to the ground of 45 degrees or less. Coarse woody debris consists of sound and rotting logs and branches, and may include stumps when specified. CWD provides habitat for plants, animals and insects, and a source of nutrients for soil development.

**Community** – a group of people with collective, common goals. (Common Usage)

**Community Forest Tenures** – the control and use of land and resources contained within an area influenced by the urban population. (Dictionary of Natural Resource Management-J. & K. Dunster)

**Communities of Interest** – sectors of society which share common goals and interests e.g. First Nations, Recreation Associations. (Common usage)

**Connectivity** – a qualitative term describing the degree to which late-succession ecosystems are linked to one another to form an interconnected network. The degree of interconnectedness and the characteristics of the linkages vary in natural landscapes based on topography and natural disturbance regime. (BC Ministry of Forests)

**Crop Trees** – a young tree of a desirable species with certain characteristics desired for timber value, water quality enhancement, or wildlife or aesthetic uses.

**Cultural Heritage Resource** – Unique or significant places and features of social, cultural or spiritual importance, such as an archaeological site, recreational site or trail, cultural heritage site or trail, historic site, or protected area.

**Considered** – mentally contemplate. (Canadian Oxford Dictionary)

**Critical** – being in or verging on a state of crisis or emergency. (The American Heritage Dictionary of the English Language, Fourth Edition)

**Crown Land** – land that is owned by the Crown; referred to as federal land when it is owned by Canada, and as provincial Crown land when it is owned by a province. Land refers to the land itself and the resources or values on or under it. (BC Ministry of Forests)

**Cut Control** – a set of rules and actions specified in the *Forest Act* that describes the allowable variation in the annual harvest rate either above or below the allowable annual cut (AAC) approved by the chief forester. (BC MoF Website Glossary)

**Deactivation** – measures taken to stabilize roads and logging trails during periods of inactivity, including the control of drainage, the removal of sidecast where necessary, and the re-establishment of vegetation for permanent deactivation. Road deactivation ranges from temporary to permanent.

**Defined Forest Area (DFA)** – a specified area of forest, land, and water delineated for the purposes of registration of a Sustainable Forest Management System. (CSA Z808-96)

**Disturbed areas** – localities which have been impacted by natural events (fire, wind, flood, insects and also by human activities such as forest harvesting or construction of roads (Dictionary of Natural resource management + common usage)

**Diverse** – made up of distinct characteristics, qualities, or elements. (The American Heritage Dictionary of the English Language, Fourth Edition)

**Duly Established Aboriginal and Treaty Rights** – existing Aboriginal and Treaty Rights are recognized and affirmed in the Canadian Constitution. When discussed in relation to renewable resources, such Aboriginal and Treaty Rights generally relate to hunting, fishing, and trapping, and in some cases, gathering. (CSA Z808-96 Page 31 Section 2.6.1)

**Ecological Reserves** – areas of Crown land which have the potential to satisfy one or more of the following criteria:

- areas suitable for scientific research and educational purposes associated with studies in productivity and other aspects of the natural environment;
- areas which are representative of natural ecosystems;
- areas in which rare or endangered native plants or animals may be preserved in their natural habitat; and
- areas that contain unique geological phenomena. (BC MoF Website Glossary)

**Ecosystem** – a functional unit consisting of all the living organisms (plants, animals, and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. An ecosystem can be of any size—a log, pond, field, forest, or the earth's biosphere—but it always functions as a whole unit. Ecosystems are commonly described according to the major type of vegetation, for example, forest ecosystem, old-growth ecosystem, or range ecosystem. (BC MoF Website Glossary)

**Educational** – of or relating to education. (The American Heritage Dictionary of the English Language, Fourth Edition)

**Enhance** – to make greater (as in value, desirability, or attractiveness). (Webster’s Collegiate Dictionary)

**Environment** – the surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation. (CSA Z808-96)

**Environmentally Sensitive Area (ESA)** – An area requiring special management attention to protect important scenic values, fish and wildlife resources, historical and cultural values, or other natural systems or processes. ESAs for forestry include potentially fragile, unstable soils that may deteriorate unacceptably after forest harvesting, and areas of high value to non-timber resources such as fisheries, wildlife, water, and recreation.

**Extension Services** – Assistance provided to people to help them learn more about a particular subject from people with specific technical expertise.

**Extraction** – the act of extracting, or drawing out; as, the extraction of a tooth, of a bone or an arrow from the body, of a stump from earth, of a passage from a book, of an essence or tincture. (Webster’s Revised Unabridged Dictionary)

**Fauna** – the animal community found in one or more regions. (Canadian Council of Forest Ministers)

**Flora** – the plant species found in one or more regions. (Canadian Council of Forest Ministers)

**Forest** – a plant community of predominantly trees and other woody vegetation growing more or less closely together, its related flora and fauna, and the values attributed to it. (CSA Z808-96)

**Forest and Range Practices Act (FRPA)** – The Forest and Range Practices Act and its regulations govern the activities of forest and range licensees in B.C. The statute sets the requirements for planning, road building, logging, reforestation, and grazing. FRPA and its regulations took effect on Jan. 31, 2004.

**Forest Land** – land supporting forest growth or capable of so doing, or, if totally lacking forest growth, bearing evidence of former forest growth and not now in other use. (CSA Z808-96)

**Forest Product** – an item that is manufactured from trees. Forest products can be classified as primary (originating from harvested timber, i.e., lumber, pulp, etc.), or secondary (a by-product of the lumber or pulp process, i.e. furniture, wood-based chemicals, etc.). (Common Usage)

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

**Forestry Planning Processes** - information sharing on proposed blocks, roads and management plans; predictive modelling; cultural heritage evaluations/assessments, etc.

**Fragmentation** – the process of transforming large continuous forest patches into one or more smaller patches surrounded by disturbed areas. This occurs naturally through such agents as fire, landslides, windthrow and insect attack. In managed forests timber harvesting and related activities have been the dominant disturbance agents. (BC MoF Website Glossary)

**Free-growing Stand** – A stand of healthy trees of a commercially valuable species, the growth of which is not impeded by competition from plants, shrubs or other trees.

**Free-growing Assessment** – the determination for whether young trees have attained free-growing status.

**Genetic diversity** – variation among and within species that is attributable to differences in hereditary material. (BC MoF Website Glossary)

**Genetically improved stock** – seed or propagule that originate from a tree breeding program and that have been specifically designed to improve some attribute of seeds, seedlings, or vegetative propagules selection. (BC MoF Website Glossary)

**Global Ecological Cycles** – The complex of self-regulating processes responsible for recycling the Earth's limited supplies of water, carbon, nitrogen, and other life-sustaining elements

**Goal** – a broad, general statement that describes a desired state or condition related to one or more forest values. (CSA Z808-96)

**Grazing Tenure** – the use and control of range land for cattle grazing purposes (common usage)

**Habitat** - the place where an organism lives and/or the conditions of that environment including the soil, vegetation, water, and food. (BC MoF Website Glossary)

**Habitat Types** – See Coarse-filter Ecosystem Group

**Healthy** – having or indicating good health in body or mind; free from infirmity or disease. (Dictionary.com)

**Healthy Community** – a community evidencing growth, interdependence, and cooperation in a variety of areas. (Common usage)

**High Value Trails** – a widely used, unrestricted right of way acknowledged as having local social or cultural significance. (Common usage)

**Hydrologic Flows** – the movement of groundwater near the surface. (Common Usage)

**Hydrogeology** – the branch of geology that deals with the occurrence, distribution, and effect of ground water. (The American Heritage Dictionary of the English Language, Fourth Edition)

**Hydrology** – the science that describes and analyzes the occurrence of water in nature, and its circulation near the surface of the earth. (BC MoF Website Glossary)

**Incremental silviculture** – a Ministry of Forests term that refers to the treatments carried out to maintain or increase the yield and value of forest stands. Includes treatments such as site rehabilitation, conifer release, spacing, pruning, and fertilization. Also known as intensive silviculture. See Basic silviculture. (BC MoF Website Glossary)

**Indicator** – a measurable variable used to report progress toward the achievement of a goal. (CSA Z808-96)

**Indicator species** – species of plants used to predict site quality and characteristics. (BC MoF website glossary)

**Indigenous** – a species of plant, animal, or abiotic material that is nature to a particular area (i.e., occurs naturally in an area and is not introduced). (Dictionary of Natural Resource Management, Julian and Katherine Dunster, 1996)

**Independent** – autonomous, self regulating. (Common Usage)

**Inoperable lands** – lands that are unsuited for timber production now and in the foreseeable future by virtue of elevation, topography, inaccessible location, low value of timber, small size of timber stands, steep or unstable soils that cannot be harvested without serious and irreversible damage to the soil or water resources, or designation as parks, wilderness areas, or other uses incompatible with timber production. (BC MoF website glossary)

**Interior Forest** – Forest that is far enough away from a natural or harvested edge that the edge does not influence its environmental conditions, such as light intensity, temperature, wind, relative humidity, and snow accumulation and melt.

**Known** – to be able to distinguish; recognize as distinct. (The American Heritage Dictionary of the English Language, Fourth Edition)

**Landscape** – a spatial mosaic of several ecosystems, landforms and plant communities intermediate between an organism's normal home-range, size and its regional distribution. (Canadian Council of Forest Ministers). A watershed or series of similar and interacting watersheds, usually between 10,000 and 100,000 hectares in size. (BC Ministry of Forests Biodiversity Guidebook pp76.)

**Linkage** – a physical, biological, cultural, psychological, or policy connection or influence between two or more objects, processes, or policies. (Dictionary of Natural Resource Management, Julian and Katherine Dunster, 1996)

**Local Community** – the north central interior including communities from 100 Mile House to Mackenzie (south to north) and from Smithers to McBride (west to east).

**Log (CWD)** – For the purposes of coarse woody debris, a log is considered as being a minimum of 2 m in length and 7.5 cm in diameter at one end.

**Mean Annual Increment** – the total volume increment for a given area to a given age in years, divided by that age ( $m^3/ha/year$ ). (BC MoF website glossary)

**Minimum Harvest Age** - The age at which the minimum harvest volume of a stand of trees is reached on the corresponding yield curve.

**Minimum Harvest Volume** – The minimum amount of merchantable volume ( $m^3/hectare$ ) by leading tree species required before a stand of trees is considered economically suitable for harvest.

**Natural** – being in accordance with or determined by nature or having a form or appearance found in nature. (Webster' Collegiate Dictionary)

**Natural Disturbance** – The historic process of fire, insects, wind, landslides, and other natural events in an area not caused by humans.

**Natural Disturbance Unit (NDU)** – Large geographic areas that have similar topography, climate, disturbance dynamics (e.g., fire cycle, patch size), stand development and successional patterns.

**Natural range of variability** – the variation in extent or occurrence through time of ecosystems, and species resulting from naturally occurring biotic or abiotic disturbances. (Common Usage)

**Net Area to be Reforested (NAR)** – (a) the portion of the area under a silviculture prescription or Site Plan that does not include:

- (i) an area occupied by permanent access structures,
  - (ii) an area of rock, wetland or other area that in its natural state is incapable of growing a stand of trees that meets the stocking requirements specified in the prescription,
  - (iii) an area of non-commercial forest cover of 4 ha or less that is indicated in the silviculture prescription as an area where the establishment of a free growing stand is not required,
  - (iv) a contiguous area of more than 4 ha that the district manager determines is composed of non-commercial forest cover, or
  - (v) an area indicated in the silviculture prescription as a reserve area where the establishment of a free growing stand is not required, and
- (b) if there is no silviculture prescription for a cut block in a woodlot license area or community forest agreement area, the portion of the cut block that does not include:
- (i) an area occupied by permanent access structures,

- (ii) an area of rock, wetland or other area that in its natural state is not capable of supporting a stand of trees that meets the stocking requirements specified in the regulations,
- (iii) an area of non-commercial forest cover of 4 ha or less that is indicated in an operational plan as an area where the establishment of a free growing stand is not required,
- (iv) a contiguous area of more than 4 ha that the district manager determines is composed of non-commercial forest cover, or
- (v) an area indicated in an operational plan as a reserve area where the establishment of a free growing stand is not required. (Forest Practices Code of BC Act; Part 1 – Definitions)

**Non-contributing** – having no involvement or effect (Common Usage)

**NHLB** – Non-Harvestable Land Base. The portion of the total area of the Defined Forest Area considered **not** to contribute to, and **not** to be available for, long-term timber supply. The non-harvestable land base includes parks, protected areas, inoperable areas, and other areas and tends to change slightly over time.

**Objective** – a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator. (CSA Z808-96)

**Old Growth Management Areas** - areas which contain, or are managed to replace, specific structural old-growth attributes and which are mapped out and treated as special management areas.

**Opportunities** – potential or possibilities of action and change (Common Usage)

**Patch** – a stand of similar-aged forest that differs in age from adjacent patches by more than 20 years. When used in the design of landscape patterns, the term refers to the size of either a natural disturbance opening that led to an even-aged forest or an opening created by cut blocks. (BC Ministry of Forests Biodiversity Guidebook pp76.)

**Peak Flow Index (PFI)** – Is an index of the maximum water flow rate that occurs within a specified period of time, usually on an annual or event basis. In the interior of British Columbia, peak flows occur as the snowpack melts in the spring.

**Period** – an interval of time, typically expressed in hours, days, months or years.

**Permanent Access Structures** – A structure, including a road, bridge, landing, gravel pit or other similar structure, that provides access for timber harvesting and is shown on a forest development plan, access management plan, logging plan, road permit or silviculture prescription / site plan as remaining operational after timber harvesting activities on the area are complete.

**Permanent Site Disturbance** – roads, landings, gravel pits, and permanent skid trails

**Plant Association** – A community of plants. A plant association is generally comprised of, at least the three most abundant species found growing on a site, with at least one representative from the tree layer and one or more representatives from either the shrub, herb, or bryophyte layers.

**Productive forest land** – forest land that is capable of producing a merchantable stand within a defined period of time. (BC MoF Website Glossary)

**Predictive Ecosystem Mapping (PEM)** – A computer-GIS, and knowledge-based method that divides landscapes into ecologically-oriented map units for management purposes. PEM is a new and evolving inventory approach designed to use available spatial data and knowledge of ecological-landscape relationships to automate the computer generation of ecosystem maps. Spatial data typically includes forest cover, digital elevation models, biogeoclimatic units, and may also include bioterrain information. Spatial data layers are overlaid using GIS to produce resultant maps and attributes. The resultant attributes are passed through the PEM knowledge base to derive final

ecosystem maps. Field sampling is used to calibrate the knowledge base and to validate the final classification.

**Protect** – the action of safe guarding and caring for the welfare of a person, area or thing. (Common Usage)

**Public Advisory Group** – an assembly that provides local people, community groups and general public that are interested in, or affected by Sustainable Forest Management (SFM) certification. (Common Usage)

**Rare Ecosystems** – infrequently occurring; uncommon functional unit consisting of all the living organisms (plants, animals, and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. (Common Usage)

**Rare Flora and Fauna** – infrequently occurring; uncommon plants and animals in a given area. (Common Usage)

**Realized Opportunity** - means timber sales licenses, direct employment, signed partnerships, joint ventures, co-operative agreements, memorandums of understanding or business contracts over a minimum value.

**Recreation Feature** – a biological, physical, cultural or historic feature that has recreational significance or value. (BC MoF Website Glossary)

**Recreation Opportunity Spectrum (ROS)** – a mix of outdoor settings based on remoteness, area size, and evidence of humans, which allows for a variety of recreation activities and experiences. The descriptions used to classify the settings are on a continuum and are described as: rural, roaded resource, semi-primitive motorized, semi-primitive non-motorized, and primitive. (BC MoF Website Glossary)

**Recruitment** – the action of enrolling or enlisting people and resources (Common Usage)

**Regeneration** – the renewal of a tree crop through either natural means (seeded on-site from adjacent stands or deposited by wind, birds, or animals) or artificial means (by planting seedlings or direct seeding). (BC MoF Website Glossary)

**Regeneration Delay** – the maximum time allowed in a prescription, between the start of harvesting in the area to which the prescription applies, and the earliest date by which the prescription requires a minimum number of acceptable well-spaced trees per hectare to be growing in that area. (BC MoF Website Glossary)

**Resource Value** – values on Crown land which include but are not limited to biological diversity, fisheries, wildlife, minerals, oil and gas, energy, water quality and quantity, recreation and tourism, natural and cultural heritage resource, timber, forage, wilderness and aesthetic values. (BC Ministry of Forests)

**Return on Capital Employed** – a key financial statistic reflecting the rate of return that the company's management has obtained, on the shareholders' behalf, by their management of the company's assets. ROCE is determined by dividing net income before income taxes for the past 12 months by Common Shareholder's Equity and Long-term Liability. The result is shown as a percentage. (Common Usage)

**Riparian** – an area of land adjacent to a stream, river, lake or wetland that contains vegetation that, due to the presence of water, is distinctly different from the vegetation of adjacent upland areas. (BC MoF Website Glossary)

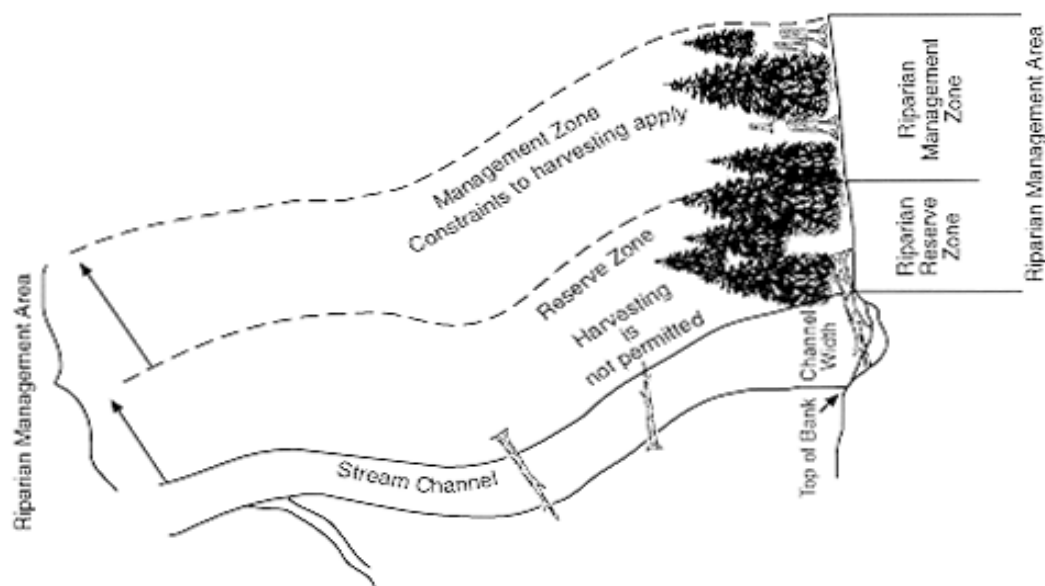


**Riparian Habitat** - Vegetation growing close to a watercourse, lake, swamp, or spring that is generally critical for wildlife cover, fish food organisms, stream nutrients and large organic debris, and for stream bank stability.

**Riparian Management Area (RMA)** – Defined in the Forest Practices Code of British Columbia Act Operational Planning Regulation as an area, of width determined in accordance with Part 10 or the regulation, that is adjacent to a stream, wetland or lake with a riparian class of L2, L3 or L4; and, consists of a riparian management zone and, depending on the riparian class of the stream, wetland or lake, a riparian reserve zone. See Figure 1.

**Riparian Management Zone (RMZ)** – Defined in the Forest Practices Code of British Columbia Act Operational Planning Regulation as that portion of the riparian management area that is outside of any riparian reserve zone or if there is no riparian zone, that area located adjacent to a stream, wetland or lake of a width determined in accordance with Part 10 or the regulation. See Figure 1.

**Riparian Reserve Zone (RRZ)** – Defined in the Forest Practices Code of British Columbia Act Operational Planning Regulation as that portion, if any, of the riparian management area or lakeshore management area located adjacent to a stream, wetland or lake of a width determined in accordance with Part 10 of the regulation. See Figure 1.



*Figure 1. Riparian management area showing a management zone and a reserve zone. Source: Riparian Management Area Guidebook 1995.*

**Road** - A path or way with a specifically prepared surface for use by vehicles.

**Road Permit** – An agreement entered into under Part 8 of the Forest Act to allow for the construction or modification of a forest road to facilitate access to timber planned for harvest.

**Scenic area** – any visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the district manager. (BC MoF Website Glossary)

**Seral Stages** – 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 becomes altered over time. The

age and structure of seral stages varies significantly from one biogeoclimatic zone to another. (BC Ministry of Forests Biodiversity Guidebook).

**Silviculture** – The theory and practice of controlling the establishment, composition, growth and quality of forest stands; can include basic silviculture (e.g., planting and seeding) and intensive silviculture (e.g., site rehabilitation, spacing and fertilization).

**Site Index** – The height of a tree at 50 years of age (age is measured at 1.3m above the ground) In managed forest stands site index may be predicted using either (1) the biogeoclimatic ecosystem classification for the site or (2) the Site Index Curve which uses the height and age of sample trees over 30 years old.

**Site Plan** – Replaces the silviculture prescription and is created and kept on file by the licensee and does not need Ministry of Forests approval. The site plan identifies the appropriate standards for:

- Stand-level biodiversity and permanent access structures at the cut block level; and
- Soil disturbance limits, stocking requirements, regeneration date, and free growing date at the standards unit level

**Site Productivity** – The site capacity of the land to produce vegetative cover (biomass).

**Site Series** – A landscape position consisting of a unique combination of soil edaphic features such as soil nutrient and moisture regimes within a biogeoclimatic subzone or variant. Soil nutrient and moisture regimes define a site series, which can produce various plant associations (see definition of "plant association"). In the BEC system, site series is identified as a number (e.g., 01,02, 03, ...).

**Snag** – A standing dead tree, or part of a dead tree, found in various stages of decay—from recently dead to very decomposed.

**Social** – of or relating to human society and its modes of organization. (The American Heritage Dictionary of the English Language, Fourth Edition).

**Soil** – the naturally occurring, unconsolidated mineral or organic material at the surface of the earth that is capable of supporting plant growth. It extends from the surface to 15 cm below the depth at which properties produced by soil-forming processes can be detected. The soil-forming processes are an interaction between climate, living organisms, and relief acting on soil and soil parent material. Unconsolidated material includes material cemented or compacted by soil-forming processes. Soil may have water covering its surface to a depth of 60 cm or less in the driest part of the year. (BC MoF Website Glossary).

**Soil Disturbance** – Disturbance caused by a forest practice on an area. This includes areas occupied by excavated or bladed trails of a temporary nature, areas occupied by corduroyed trails, compacted areas, and areas of dispersed disturbance.

**Soil Moisture Regime** – The amount of moisture in the soil. Generally shown on a scale going from **xeric** (being deficient in moisture - dry) to **mesic** (characterized by moderate or a well-balanced supply of moisture) to **hydric** (characterized by excessive moisture).

**Species at risk**– A wildlife species that is facing extirpation or extinction if nothing is done to reverse the factors causing its decline, or that is of special concern because it is particularly sensitive to human activities or natural events.

**Species Sensitive to Disturbance** – plants or animals susceptible to disturbance by natural events (fire, wind, flood, insects) and also by human activities such as forest harvesting or construction of roads. (Common Usage).

**Stand** – a community of trees sufficiently uniform in species composition, age, arrangement, and condition to be distinguishable as a group from the forest or other growth on the adjoining area, and thus forming a silviculture or management entity. (BC MoF Website Glossary)

**Stakeholder** – A person with an interest or concern with resource management within a defined area (i.e. community, forest district, defined forest area).

**Standards Unit** - An area that is managed through the uniform application of a silvicultural system, stocking standards, and soil conservation standards. These standards are used to determine if legal regeneration, free growing, and soil conservation obligations are met.

**Stocking Standard** – The required range of healthy, well-spaced, acceptable trees growing on an area to achieve a free growing stand.

**Sustainability** – the concept of producing a biological resource under management practices that ensure replacement of the part harvested, by regrowth or reproduction, before another harvest occurs. (BC MoF Website Glossary)

**Sustainable Forest Management (SFM)** – Management “to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social, and cultural opportunities for the benefit of present and future generations”<sup>23</sup>

**Temporary Access Structures** – the area of land within the Designated Forest Area that has been converted through land-use policy (temporarily removed from the productive forest land base to be rehabilitated after use) to provide access for resources development and protection. Temporary access structures include those haul roads, landings and excavated or bladed trails that will be restored to a productive state upon completion of harvesting. Temporary access structures are identified on operational plans and prescriptions. All areas occupied by temporary access structures must be rehabilitated so that all silvicultural obligations are achieved on the whole of the net area to be reforested. (BC Forest Practices Code Soil Conservation Guidebook)

**Terrestrial Ecosystem Mapping (TEM)** – Terrestrial Ecosystem Mapping is a process of dividing landscapes into ecological units that differ from one another with respect to climate, geomorphology, bedrock geology and vegetation. In British Columbia, a total of four classifications are typically mapped, including: ecoregions, biogeoclimatic units, ecosystem units (site series), and seral community types (structural stage). Ecosystem units are delineated on aerial photographs using biophysical criteria and are confirmed through field sampling. In Alberta, forest cover and other landscape information, augmented by extensive ground sampling, is used to produce ecosystem unit maps (ecosites) within natural subregions.

**Timber Harvesting Land Base (THLB)** – The portion of the total area of the Defined Forest Area considered to contribute to, and to be available for, long-term timber supply. The harvesting land base is defined by reducing the total land base according to specified management assumptions and tends to change slightly over time.

**Understory** – any plants growing under the canopy formed by other plants, particularly herbaceous and shrub vegetation under a tree canopy. (BC MoF Website Glossary)

**Value** – a principle, standard, or quality considered worthwhile or desirable. (CSA Z808-96)

**Viable** – an action or proposed action which has a feasible, realistic outcome (Common Usage)

**Visual Quality Objective** – a resource management objective established by the district manager or contained in a higher level plan that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. Five categories of VQO are commonly used:

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<sup>23</sup> *The State of Canada's Forests 2001/2002*, as cited by the CSA.

preservation; retention; partial retention; modification; and, maximum modification. (BC MoF Website Glossary)

**Unsalvaged Losses** - the volume of timber destroyed by natural causes such as fire, insect, disease or blowdown and not harvested, including the timber actually killed plus any residual volume rendered non-merchantable.

**Utilization Standards** - the dimensions (stump height, top diameter, base diameter, and length) and quality of trees that must be cut and removed from Crown land during harvesting operations. For detailed standards see the Provincial Logging Residue and Waste Measurement Procedures Manual (July 1, 2002 & May 1, 2004 – Draft).

**Waste** - the volume of timber left on the harvested area that should have been removed in accordance with the minimum utilization standards in the cutting authority. It forms part of the allowable annual cut for cut-control purposes. For detailed standards see the Provincial Logging Residue and Waste Measurement Procedures Manual (July 1, 2002 & May 1, 2004 – Draft).

**Water Quality** – the physical, chemical and biological properties of water.

**Watershed** – an area of land, which may or may not be under forest cover, draining water, organic matter, dissolved nutrients, and sediments into a lake or stream. The topographic boundary, usually a height of land that marks the dividing line from which surface streams flow in two different directions. (Dictionary of Natural Resource Management, Julian and Katherine Dunster, 1996)

**Windthrow** – see Blowdown.

**Winter Range** – a range, usually at lower elevation, used by migratory deer, elk, caribou, moose, etc., during the winter months and typically better defined and smaller than summer range. (BC MoF Website Glossary)

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**APPENDIX 2 – SUMMARY OF PUBLICLY DEVELOPED VALUES, OBJECTIVES AND INDICATORS**

**REVISION TABLE**

Date	Indicator	Previous Description	Revised Description	Rationale	PAG Consensus / Agreement Date
March 11, 2014	1.1.2 Forest area by type or species composition	Target: Coniferous: 70-90%	Target: Coniferous: 73-93%	Excluding BCTS’s operating areas from the DFA results in a shift in the % distribution for coniferous forests, from 87.7% of the DFA to 90.6% of the DFA.	March 11 <sup>th</sup> 2014
March 11, 2014	5.2.3 Level of direct and indirect employment	Target: Five-year rolling average (5252 jobs) Variance: >= 65% of the target (3414 jobs)	Target: Five-year rolling average (3388 jobs) Variance: >= 86% of the target (3388 jobs)	The 2012 target & variance included jobs related to BCTS’s annual cut; the 2014 target & variance reflect jobs related to Canfor’s annual cut alone.	March 11 <sup>th</sup> 2014
March 11, 2014	Current status updated for indicators: 1.1.1, 1.1.2, 1.3.1, 2.2.1, 2.2.2, 3.2.1, 5.1.1, 6.1.2			Current status updated to reflect change in baseline due to BCTS’s departure from the plan	N/A

CCFM Criterion	CSA Element	Value	Objective	Core Indicator	Indicator Statement	Target
1. Biological Diversity Conserve biological diversity by maintaining integrity, function, and diversity of living	1.1 Ecosystem Diversity Conserve ecosystem diversity at the stand and landscape level by maintaining the variety of	Well-balanced and functioning ecosystems that support natural	Maintain landscapes that support the natural diversity, variety	1.1.1 Ecosystem Area by Type	1.1.1: Total hectares logged in rare and uncommon ecosystems	0 hectares. Variance: based on assessments completed by professionals, those

organisms and the complexes of which they are part	communities and ecosystems that naturally occur in the DFA	processes	and pattern of ecosystems			ecosystems deemed poor representation of the rare ecosystem can be harvested.
				1.1.2 Forest area by type or species composition	1.1.2: Percent distribution of forest type (treed conifer, treed broadleaf, treed mixed) >20 years old across DFA	Treed conifer: 73-93%, Treed Broadleaf: 1.5-6%, Treed Mixed: 5-15%. Variance: None below proposed targets.
				1.1.3 Forest area by seral stage or age class	1.1.3(a): Percent late seral distribution by ecological unit across the DFA	As per the "Landscape Biodiversity Objectives for the PG TSA" (applicable to operating areas within the PG District); and as per the Provincial Non-Spatial Old Growth Objective (applicable to TFL30). The target is to manage to the science mean with a variance to the minimum of the legal objectives. Variance: as above.
					1.1.3(b): Maintain a variety of young patch sizes in an attempt to approximate natural disturbance.	As per the "Landscape Biodiversity Objectives for the PG TSA". Variance: As per the "Landscape Biodiversity Objectives for the PG TSA".



				1.1.4 Degree of within-stand structural retention	1.1.4(a): Percent of stand structure retained across the DFA in harvested areas	Average of 7% annually for blocks harvested within the DFA, with a minimum of 3.5%. Variance: For Canfor: 0%.
					1.1.4(c): Number of non-conformances where forest operations are not consistent with riparian management requirement as identified in operational plans	0. Variance: 0
	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	Sustainable populations of flora and fauna native to the DFA	Maintain habitat to support flora and fauna native to the DFA	1.2.1 Degree of habitat protection for selected focal species, including species at risk	1.2.1: Percent of forest management activities consistent with current Best Management Practices for Species of Management Concern	100%. Variance: 0%
1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk						
1.2.3 Proportion of Regeneration comprised of native species				1.2.3: Artificial regeneration will be consistent with provincial regulations and standards	100%. Variance: -5%	

					for seed and vegetative material use.	
	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	Genetic Diversity	Maintain natural genetic diversity within planted crop trees and vegetative material.	No core indicator in Z809-08 for Element 1.3	1.1.2: Percent distribution of forest type (treed conifer, treed broadleaf, treed mixed) >20 years old across DFA	Treed conifer: 70-90%, Treed Broadleaf: 1.5-6%, Treed Mixed: 5-15%. Variance: None below proposed targets.
					1.1.3(a): Percent late seral distribution by ecological unit across the DFA	As per the "Landscape Biodiversity Objectives for the PG TSA" (applicable to operating areas within the PG District); and as per the Provincial Non-Spatial Old Growth Objective (applicable to TFL30). The target is to manage to the science mean with a variance to the minimum of the legal objectives. Variance: as above.
					1.1.3(b): Maintain a variety of young patch sizes in an attempt to approximate natural disturbance.	As per the "Landscape Biodiversity Objectives for the PG TSA". Variance: As per the "Landscape Biodiversity Objectives for the PG TSA".
					1.2.1: Percent of forest management activities consistent with current Best Management Practices for Species of Management Concern	100%. Variance: 0%
					1.2.3: Artificial regeneration will be consistent with provincial regulations and standards	100%. Variance: 5%

					for seed and vegetative material use.	
					1.4.1: Percent of forest management activities consistent with management strategies for protected areas and sites of biological significance, as contained in operational plans	100% of known forest values, knowledge and uses considered. Variance: 0%.
	1.4 Protected Areas and Sites of Special Biological and Cultural Significance Respect protected areas identified through government processes. Cooperate 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	Protected areas and sites of special biological and cultural significance	To maintain representative areas of naturally occurring and important ecosystems, rare physical environments and sites of cultural significance	1.4.1 Proportion of identified sites with implemented management strategies	1.4.1: Percent of forest management activities consistent with management strategies for protected areas and sites of biological significance, as contained in operational plans.	100% of known forest values, knowledge and uses considered. Variance: 0%.
				1.4.2 Protection of identified sacred and culturally important sites	1.4.2: % of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes	100% of known forest values, knowledge and uses considered. Variance: 0%
2. Ecosystem Condition and Productivity Conserve forest ecosystem condition and productivity by maintaining the health, vitality, and rates of biological production	2.1 Forest Ecosystem Resilience Conserve ecosystem resilience by maintaining both ecosystem processes and ecosystem conditions	Resilient forest ecosystems	Well-balanced ecosystems that support natural processes	2.1.1 Reforestation success	2.1.1(a): The regeneration delay, by area, for stands established annually	100% of Net Area Reforested (NAR) regenerated within 3 years (artificial) and 6 years (natural) from harvest commencement. Variance: 0%
					2.1.1(b): The % of block area that meets free	100%. Variance: 0%

					growing requirements as identified in site plans.	
	2.2 Forest Ecosystem Productivity Conserve 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	Productive ecosystems	Maintain ecosystems that are capable of supporting naturally occurring species	2.2.1 Additions and deletions to the forest area	2.2.1(a) - The % of gross land base in the DFA converted to non-forested land use through forest management activities.	<3% of gross land base in the DFA. Variance: 0%
2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested				2.2.2: Percent of volume harvested compared to allocated harvest level	100% over 5 years. Variance: +10%	
3. Soil and Water Conserve soil and water resources by maintaining their quantity and quality in forest ecosystems	3.1 Soil Quality and Quantity Conserve soil resources by maintaining soil quality and quantity	Soil conservation	The productive capacity of forest soils within the Timber Harvesting Land Base (THLB) is sustained	3.1.1 Level of soil disturbance	3.1.1: Percent of harvested blocks meeting soil disturbance objectives identified in plans	100% of blocks meet soil disturbance objectives. Variance: 0%
				3.1.2 Level of downed woody debris	3.1.2: % of cut blocks where post harvest CWD levels are within the targets contained in Plans.	100% of blocks harvested annually will meet targets. Variance: -10%
	3.2 Water Quality and Quantity Conserve water resources by maintaining water quality and quantity	Water conservation	Maintain water quality and water quantity in the Defined Forest Area (DFA).	3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance	3.2.1(a): The percentage of watersheds with active operations that have had a watershed assessment completed.	100%. Variance: 0%

					3.2.1(b): The percentage of active operations within high-risk watersheds that implement the recommendations of a hydrologic assessment.	100%. Variance: 0%
					3.2.1(c): Percentage of high hazard drainage structures in watersheds with identified water quality concerns that have mitigation strategies implemented.	100%. Variance: 0%
4. Role in Global Ecological Cycles Maintain forest conditions and management activities that contribute to the health of global ecological cycles	4.1 Carbon Uptake and Storage Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems	Uptake and storage of carbon in forest ecosystems.	Facilitate carbon uptake and storage within harvested areas.	4.1.1 Net carbon uptake	4.1.1(a): Areas with stand damaging agents will be prioritized for treatment	100%. Variance = -10%.
					1.1.3(a): Percent late seral distribution by ecological unit across the DFA	100% old forest, old forest interior and non pine targets as per Jan, 2012. Variance = 0%.
					1.1.3(b): Maintain a variety of young patch sizes in an attempt to approximate natural disturbance.	As per the "Landscape Biodiversity Objectives for the PG TSA". Variance: As per the "Landscape Biodiversity Objectives for the PG TSA".
					2.1.1(a): The regeneration delay, by area, for stands established annually	100% of Net Area Reforested (NAR) regenerated within 3 years (artificial) and 6 years (natural) from harvest commencement. Variance: 0%

					2.1.1(b): The % of block area that meets free growing requirements as identified in site plans.	100%. Variance: 0%
					2.2.1(a) - The % of gross land base in the DFA converted to non-forested land use through forest management activities.	<3% of gross land base in the DFA. Variance: 0%
	<b>4.2 Forest Land Conversion</b> Protect forest lands from deforestation or conversion to non-forests, where ecologically appropriate	Forest Land	Minimize the conversion of forest land to non-forest land	2.2.1 Additions and deletions to the forest area	2.2.1(a) - The % of gross land base in the DFA converted to non-forested land use through forest management activities.	<3% of gross land base in the DFA. Variance: 0%
5. Economic and Social Benefits Sustain flows of forest benefits for current and future generations by providing multiple goods and services	5.1 Timber and Non-Timber Benefits Manage the forest sustainably to produce an acceptable and feasible mix of timber and non-timber benefits. Evaluate timber and non-timber forest products and forest-based services	Short and long term benefits.	Maintaining a flow of timber benefits	5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	2.2.2: Percent of volume harvested compared to allocated harvest level	100% over 5 years. Variance: +10%
					4.1.1(a): Areas with stand damaging agents will be prioritized for treatment.	100%. Variance: -10%
			Maintaining a flow of non-timber benefits		5.1.1(b): Conformance with strategies for non-timber benefits identified in plans	No non-conformances for site level plans. Variance: 0

	<p>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</p>	<p>Community well-being</p>	<p>Support opportunities for maintaining a resilient and stable community</p>	<p>5.2.1 Level of investment in initiatives that contribute to community sustainability</p>	<p>5.2.1(a): Percent of money spent on forest operations and management in the DFA provided by North Central Interior suppliers and contractors.</p>	<p>Target: <math>\geq 90\%</math> of dollars spent in local communities (5 year rolling average). Variance: -5%.</p>
<p>5.2.1(b): Number of donations to the local community - applies to Canfor only.</p>					<p><math>\geq 6</math> donations; Variance: 0.</p>	
<p>5.2.2 Level of investment in training and skills development</p>				<p>5.2.2: Training in environmental &amp; safety procedures in compliance with company training plans</p>	<p>100% of company employees and contractors will have both environmental &amp; safety training. Variance: -5%.</p>	

				5.2.3 Level of direct and indirect employment	5.2.3: Level of Direct & Indirect Employment	Cut control volume harvested multiplied by most current local direct and indirect employment multiplier, as a five year rolling average (3388). Variance: > = 86% of the target (3388 jobs)
			Provide/support opportunities for maintaining a resilient and stable community	5.2.4 Level of Aboriginal participation in the forest economy	5.2.4: Number of opportunities for Aboriginals to participate in the forest economy	>= number of realized opportunities from baseline assessment (3-year rolling average). Variance = -10% of baseline
6. Society’s Responsibility Society’s responsibility for sustainable forest management requires that fair, equitable, and effective forest management decisions are made	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	Aboriginal title and rights and Treaty Rights	Recognition and respect for Aboriginal and treaty rights	6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights	6.1.1: Employees will receive Aboriginal awareness training	100%. Variance = -10%
				6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans	6.1.2: Evidence of best efforts to share interests and plans with Aboriginal communities	>=3 approaches/Aboriginal community within the DFA, for 100% of management plans, as required. Variance: None.
				6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur	6.1.3: Percent of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses, communicated through	100% compliance with operational plans. Variance = 0%



					information-sharing and cultural heritage evaluations.	
	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	Aboriginal Forest Values, Knowledge and Uses	Incorporation of Aboriginal Forest Values, Knowledge and Uses in Forest Management	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	1.4.2: % of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes	100% of known forest values, knowledge and uses considered. Variance = 0%
	6.3 Forest Community Well-Being and Resilience Encourage, co-operate with, or help to provide opportunities for economic diversity within the community	Community well-being	Provide/support opportunities for maintaining a resilient and stable community	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	6.3.1(a): Primary and by-products that are bought, sold, or traded with other forest-dependent businesses in the local area.	Increasing number of purchase/sale/trade relationships. Variance: +
6.3.2 Evidence of co-operation with DFA-related workers and their				6.3.2: Implementation and maintenance of a certified safety program.		

				<p>unions to improve and enhance safety standards, procedures, and outcomes in all DFA-related workplaces and affected communities</p>		
				<p>6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved</p>		
	<p>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 it's progress</p>	<p>Public participation in decision making processes.</p>	<p>A clear process for a wide public participation in SFM.</p>	<p>6.4.1 Level of participant satisfaction with the public participation process</p>	<p>6.4.1: PAG established and maintained, and satisfaction survey implemented according to the Terms of Reference</p>	<p>PAG meeting satisfaction score of <math>\geq 4</math>. Variance = 0</p>

				6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general	6.4.2: Number of educational opportunities for information/training that are delivered to the PAG.	>=2 (annual). Variance = none.
				6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities	6.1.2: Evidence of best efforts to approach Aboriginal communities for proactive input on management plans	>=3 approaches/Aboriginal community within the DFA, for 100% of management plans, as required. Variance: None.
	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	Informed, fair and inclusive decision-making	Provide relevant information and educational opportunities to support involvement in public participation processes	6.5.1 Number of people reached through educational outreach	6.5.1: The number of people who attend the educational opportunities provided	>=200 people and >=4 events. Variance: -10.
6.5.2 Availability of summary information on issues of concern to the public				6.5.2: SFM monitoring report made available to the public	SFM monitoring report available to public annually via web. Variance: None	
				Total	35 indicators	
Additional Local Level Indicators Removed from the SFMP						

## APPENDIX 3 – SPECIES OF MANAGEMENT CONCERN

### Wildlife Species

English Name	COSEWIC	BC List	Prov Wildlife Act	SARA
White Sturgeon	E (Nov 2003)	No Status		1-E (Aug 2006)
White Sturgeon (Nechako River population)	E (Nov 2003)	Red		1-E (Aug 2006)
White Sturgeon (Upper Fraser River population)	E (Nov 2003)	Red		1-E (Aug 2006)
White Sturgeon (Middle Fraser River population)	E (Nov 2003)	Red		
Rocky Mountain Capshell	NAR (Nov 2001)	Blue		
Western Toad	SC (Nov 2002)	Blue		1-SC (Jan 2005)
Great Blue Heron, <i>herodias</i> subspecies		Blue		
Short-eared Owl	SC (Mar 2008)	Blue		3 (Mar 2005)
American Bittern		Blue		
Broad-winged Hawk		Blue		
Salish Sucker	E (Nov 2002)	Red		1-E (Jan 2005)
Common Nighthawk	T (Apr 2007)	Yellow		1-T (Feb 2010)
Mead's Sulphur		Blue		
Pelidne Sulphur		Blue		
Olive-sided Flycatcher	T (Nov 2007)	Blue		1-T (Feb 2010)
Bobolink	T (Apr 2010)	Blue		
Hagen's Bluet		Blue		
Beaverpond Baskettail		Blue		
Rusty Blackbird	SC (Apr 2006)	Blue		1-SC (Mar 2009)
Pygmy Fossaria		Blue		
Wolverine, <i>luscus</i> subspecies	SC (May 2003)	Blue		
Barn Swallow	T (May 2011)	Blue		
Fisher		Blue		
Northern Myotis		Blue		
Long-billed Curlew	SC (May 2011)	Blue		1-SC (Jan 2005)
Jutta Arctic, <i>chermocki</i> subspecies		Blue		
Bighorn Sheep		Blue		
American White Pelican	NAR (May 1987)	Red	Endangered	
Caribou (southern mountain population)	T (May 2000)	Red		1-T (Jun 2003)
Caribou (northern mountain population)	T/SC (May 2002)	Blue		1-SC (Jan 2005)
Bull Trout	C (Jul 2011)	Blue		
Quebec Emerald		Blue		
Forcipate Emerald		Blue		
Mormon Fritillary, <i>eurynome</i> subspecies		Red		
Sharp-tailed Grouse, <i>columbianus</i> subspecies		Blue		

**Plants**

English Name	BC List	BGC
American sweet-flag	Blue	ICHdw;ICHxw;IDFmw;SBSdk;SBSmh;SBSwk
riverbank anemone	Blue	BWBSmw;SBSmh
meadow arnica	Blue	BWBSmw;ICHvk;IDFdm;IDFxm;SBPSxc;SBSmc
<i>Brachythecium campestre</i>	Blue	ESSF;ICH;SBS
short-flowered evening-primrose	Red	IDFdk;MSxk;SBSmk
swollen beaked sedge	Blue	CWHvm;ESSFdk;IDFdm;IDFvk;IMAun;SBPSxc;SBSdw
pointed broom sedge	Blue	BWBSmw;CDFmm;CWHdm;CWHvh;CWHxm;ESSFdk;ICHdw;ICHwk;ICHxw;SBSvk
Sprengel's sedge	Red	IDFxm;SBSmh
tender sedge	Blue	BWBSdk;ESSFmv;ESSFwm;ICHmk;ICHwk;SBSmh
bald sedge	Blue	ICHmm;SBSdh;SBSdw;SBSmk
Austrian draba	Blue	BAFA;CMA;IMA;SBSmk;SWBun
crested wood fern	Blue	ESSFwc;ICHdw;ICHmc;ICHmw;ICHvk;ICHwk;ICHxw;IDFmw;IDFvh;SBSmk
Hall's willowherb	Blue	BGxh;BGxw;CDFmm;ESSFdc;ICHdw;ICHwk;SBSwk;SWBun
northern bog bedstraw	Blue	BWBSmw;BWBSwk;ICHmw;ICHwk;SBSmk;SBSwk
arctic rush	Blue	BWBSdk;BWBSmw;CWHvh;ESSFdk;ESSFwk;SBSun;SWBdk;SWBmk;SWBun
bog rush	Blue	CWHvh;CWHvm;CWHws;ICHmw;SBSdw;SBSmh;SBSmk;SBSvk;SBSwk
white adder's-mouth orchid	Blue	BWBSdk;BWBSmw;CDFmm;CWHdm;CWHvm;CWHwh;CWHws;CWHxm;SBSvk
bog adder's-mouth orchid	Blue	CWHvh;CWHvm;CWHwh;SBSdw;SBSwk
<i>Meesia longiseta</i>	Blue	BWBS;ESSF;MS;SBS;SWB
water marigold	Blue	CDFmm;ICHdw;ICHmw;ICHxw;IDFdm;IDFun;SBSmk
<i>Myrinia pulvinata</i>	Red	BWBSmw;SBSmh
cryptic paw	Blue	CWH;ICH
pygmy waterlily	Blue	CWHvh;SBSmk;SBSwk
Davis' locoweed	Blue	BAFA;BWBSdk;BWBSmw;CMA;IMA;SBSmh;SWBmk
small-flowered lousewort	Blue	CWHvh;ICHmk;ICHwk;MHwh;MSxv;SBSmh;SBSmk;SBSwk;SWBun
whitebark pine	Blue	BAFAun;BAFAunp;CMAunp;CWHdm;CWHds;CWHms;CWHun;CWHvm;CWHws;ESSFdc;ESSFdc;ESSFdcw;ESSFdk;ESSFdkp;ESSFdkw;ESSFdm;ESSFdmp;ESSFdmw;ESSFdv;ESSFdv;ESSFdv;ESSFmc;ESSFmcp;ESSFmk;ESSFmkp;ESSFmm;ESSFmmp;ESSFmv;ESSFmvp;ESSFmw;ESSFmwp;ESSFmw;ESSFvc;ESSFvcp;ESSFvcw;ESSFwc;ESSFwcp;ESSFwcv;ESSFwk;ESSFwm;ESSFwmp;ESSFwmu;ESSFwmw;ESSFwv;ESSFwvp;ESSFxc;ESSFxc;ESSFxcw;ESSFxcv;ESSFxcvp;ESSFxcv;ICHdm;ICHdw;ICHmc;ICHmk;ICHmm;ICHmw;ICHvk;ICHwk;IDFdc;IDFdk;IDFdm;IDFdw;IDFfw;IDFxc;IDFvh;IMAun;IMAunp;MHmm;MHmmp;MSdc;MSdk;MSdm;MSdv;MSmw;MSxk;MSxv;SBPSxc;SBSdh;SBSmc;SBSvk;SBSwk
<i>Pohlia elongata</i>	Blue	BAFA;CWH;ESSF;ICH;IMA
white wintergreen	Blue	BWBSmw;CWHvm;ESSFmw;ICHmw;IDFfw;IDFxm;MHmm;MSxk;SBSdw;SBSmh
<i>Rhodobryum roseum</i>	Blue	CWHvh;ICHwk;SBSwk

English Name	BC List	BGC
water bur-reed	Blue	CWHds;CWHvh;CWHvm;CWHwh;CWHxm;ICHdw;IDFww;SBSdk;SBSdw;SBSmk
<i>Sphagnum wulfianum</i>	Blue	ICH;SBS
<i>Tomentypnum falcifolium</i>	Blue	BAFA;ESSF;IDF;MS;SBS
Fernald's false manna	Red	CWHxm;ICHdw;ICHwk;SBSdk

### **Plant Communities**

English Name	BC List	Biogeoclimatic Units
subalpine fir / alders / horsetails	Blue	ESSFmv2/06;ESSFmv4/05
subalpine fir / reindeer lichens - clad lichens	Blue	ESSFmm1/03
hybrid white spruce - paper birch / devil's club	Blue	ICHmc2/54;SBSmh/07
hybrid white spruce / pinegrass / step moss	Blue	SBPSmk/05
hybrid white spruce / hardhack	Blue	SBSmw/05
hybrid white spruce / hardhack / oak fern	Blue	SBSwk1/06
hybrid white spruce / hardhack - prickly rose	Blue	SBSdw3/06
hybrid white spruce / foam lichens	Red	SBSdw2/00
lodgepole pine / clad lichens - juniper haircap moss	Blue	SBPSmk/02;SBSmc1/02
lodgepole pine - black spruce / red-stemmed feathermoss	Blue	SBPSdc/04;SBSdw2/07;SBSdw3/05
lodgepole pine / Kruckeberg's holly fern - Indian's-dream	Red	SBSmw/00
lodgepole pine / black huckleberry / reindeer lichens	Blue	SBSvk/09;SBSwk1/02;SBSwk2/02;SBSwk3/02
lodgepole pine / black huckleberry - velvet-leaved blueberry	Blue	SBSmw/03;SBSvk/02;SBSwk1/03
Douglas-fir - subalpine fir / black huckleberry	Blue	SBSmw/02
Douglas-fir / Douglas maple / step moss	Red	SBSmh/04
Douglas-fir - hybrid white spruce / falsebox	Blue	SBSmw/01
Douglas-fir - hybrid white spruce / knight's plume	Blue	SBSmk1/04;SBSmw/04;SBSwk1/04

English Name	BC List	Biogeoclimatic Units
Douglas-fir - hybrid white spruce / electrified cat's-tail moss	Blue	SBSdw2/05
Douglas-fir - hybrid white spruce / thimbleberry	Blue	SBSdh1/06;SBSdw1/06;SBSmh/01;SBSmh/05;SBSmh/06;SBSvk/03;SBSwk3/03;SBSwk3a/01;SBSwk3a/03
Douglas-fir - lodgepole pine / clad lichens	Blue	SBSdw1/02;SBSdw2/02;SBSdw3/02;SBSmh/02;SBSmh/03
western redcedar / prince's pine / electrified cat's-tail moss	Blue	ICHwk3/03
western redcedar / falsebox	Blue	ICHdk/02;ICHmk2/01;ICHmk2/04;ICHmk3/01;ICHm/02;ICHwk4/03
western hemlock / wood horsetail / peat-mosses	Blue	ICHwk3/07
western hemlock / false azalea / clad lichens	Red	ICHwk3/02
western hemlock - western redcedar / clad lichens	Blue	ICHvk2/02;ICHwk2/02;ICHwk4/02
	Red	ICHvk2/05[D1]

Species List generated from a query in the Conservation Data Center of all Red and Blue listed species and Species at Risk, in the Prince George Forest District – June 2012.

Includes species with provincial conservation status of Red and Blue, plus species identified in species accounting system.

Species of Management Concern identifies species that both occur in the DFA and are affected by Forest Management.

SAS group definitions

1. Generalists and/or species that benefit from forest practices
2. Species that are associated with broad habitat types.
3. Species with Strong dependencies on specific habitat elements. (riparian, wetlands, cavities, snags, etc)
4. Species restricted to highly localized and/or specialized habitats.
5. Species for which patch size and connectivity are considered important.
6. Species not dependent on forested environments.

**APPENDIX 4 – NON-REPLACEABLE FOREST LICENSE (NRFL) RISK ASSESSMENT**

Canfor does not have exclusive rights to harvesting on the DFA. Other license holders, primarily small companies holding non-replaceable forest licenses issued to address the salvage of mountain pine beetle killed timber, also operate within the DFA. As a result, these license holders do have the ability to impact Canfor's ability to achieve their targets for some of the indicators in this plan. To provide confidence that the reporting is representative of what is happening in the DFA, the matrix below describes how each indicator is or is not impacted by other operators, and exactly what is being reported.

Prince George District Licensee Volume Summary Table

Licensee	License	Expiry	Type	AAC	Volume that could be harvested in DFA	Volume managed by SFMP signatories	Total remaining volume for non replaceable licenses	Remarks/Risk assessment	Risk to SFMP
Canadian Forest Products Ltd.	A40873	31-Oct-2021	Replaceable	1,597,771	798,886	798,886		Signatory to the SFM plan	Nil
Canadian Forest Products Ltd.	A18165	31-Oct-2021	Replaceable	1,104,858	552,429	552,429		Signatory to the SFM plan	Nil
Canadian Forest Products Ltd.	A18167	14-Oct-2021	Replaceable	0	0	0		Signatory to the SFM plan	Nil
Canadian Forest Products Ltd.	TFL30	28-Feb-2035	TFL	412,500	412,500	412,500		Signatory to the SFM plan; BCTS entitled to 21,312 m <sup>3</sup> annually of the 412,500 m <sup>3</sup> AAC	Nil
BC Timber Sales - Prince George	N/A		Timber Sales	2,460,000 (Total PG TSA)	693,105			Certified to SFI (includes 200,000 EOI)	Low



Licensee	License	Expiry	Type	AAC	Volume that could be harvested in DFA	Volume managed by SFMP signatories	Total remaining volume for non replaceable licenses	Remarks/Risk assessment	Risk to SFMP
Dunkley Lumber Ltd.	A18169	31-Oct-2021	Replaceable	201,978	201,978			Certified to SFI. Have their own operating areas within the Prince George TSA, and do not harvest within the DFA.	Low
Winton Global Lumber Ltd.	A18171	30-Nov-2021	Replaceable	505,541	505,541			Signatory to SFM plan until 2009 and now certified to SFI. Have their own operating areas within the Prince George TSA, and do not harvest within the DFA.	Low
Carrier Lumber Ltd.	A18158	30-Nov-2021	Replaceable	253,027	253,027			Signatory to SFM plan until Fall 2010; now certified to SFI. Have their own operating areas within the Prince George TSA, and do not harvest within the DFA.	Low
Stella-Jones Inc.	A18160	14-Nov-2021	Replaceable	47,048	47,048			Managed by Dunkley Lumber Ltd. (DLL); DLL is certified to SFI. Have their own operating areas within the Prince George TSA, and do not harvest	Low

Licensee	License	Expiry	Type	AAC	Volume that could be harvested in DFA	Volume managed by SFMP signatories	Total remaining volume for non replaceable licenses	Remarks/Risk assessment	Risk to SFMP
								within the DFA.	
Lakeland Mills Inc.	A18163	30-Nov-2021	Replaceable	249,827	249,827			Signatory to SFM plan until 2009 and now certified to SFI. Have their own operating areas within the Prince George TSA, and do not harvest within the DFA.	Low
Ainsworth Lumber Co. Ltd.	A71015	30-Jun-2014	Non-Replaceable	50,000	50,000		150,000	Deciduous volume; low volume, expiring relatively soon	Low
Dunkley Lumber Ltd.	TFL53	31-Aug-2024	TFL	219,000	219,000			Not part of the DFA	Nil
Tano T'enneh	A90812	31-Mar-2018	Non-Replaceable	101,888	101,888	101,888	509,440	Managed by Canfor, within the DFA	Nil
Total volume				7,203,437	4,085,228	1,865,703	659,440		
Pct of volume that could be harvested in DFA, and is managed by SFMP signatories						45.7%			
Volume that could be harvested in DFA assessed as low risk						2,000,526			
Pct of volume that is low risk to the DFA						49.0%			
Volume that could be harvested assessed as moderate risk						0			

Licensee	License	Expiry	Type	AAC	Volume that could be harvested in DFA	Volume managed by SFMP signatories	Total remaining volume for non replaceable licenses	Remarks/Risk assessment	Risk to SFMP
	Pct of volume that is moderate risk to the DFA					0.0%			

**APPENDIX 5 –RISK RANKING – POTENTIAL IMPACT OF OTHER LICENSEES ON ACHIEVEMENT OF SFM TARGETS**

Risk Rank Ref	Expected Impact of Other Licensees on the Indicator
a	Other licensees (NRFL holders) DO have the ability to impact the target, however, the annual report will include these activities in the analysis to the extent the data that is publically available is current.
b	Other licensees (NRFL holders) DO have the ability to impact the target, however, legislation exists that regulates the activity and result. As all licensees are subject to this regulation, the risk of others impacting Canfor's ability to achieve the target is considered LOW
c	This indicator applies only to Canfor's activities on the DFA.

Indicator #	Indicator Statement	Target	Risk Rank Ref
1.1.1	Total hectares logged in rare and uncommon ecosystems	0 hectares. Variance: based on assessments completed by professionals, those ecosystems deemed poor representation of the rare ecosystem can be harvested	a
1.1.2	Percent distribution of forest type (treed conifer, treed broadleaf, treed mixed) >20 years old across DFA	Treed conifer: 73-93% Treed Broadleaf: 1.5-6%, Treed Mixed: 5-15%. Variance: None below proposed targets.	a
1.1.3(a)	Percent late seral distribution by ecological unit across the DFA	As per the “Landscape Biodiversity Objectives for the PG TSA” (applicable to operating areas within the PG District); and as per the Provincial Non-Spatial Old Growth Objective (applicable to TFL30). The target is to manage to the science mean with a variance to the minimum of the legal objectives. Variance: as above.	b

Indicator #	Indicator Statement	Target	Risk Rank Ref
1.1.3(b)	Maintain a variety of young patch sizes in an attempt to approximate natural disturbance.	As per the "Landscape Biodiversity Objectives for the PG TSA". Variance: As per the "Landscape Biodiversity Objectives for the PG TSA".	b
1.1.4(a)	Percent of stand structure retained across the DFA in harvested areas	Average of 7% annually for blocks harvested within the DFA, with a minimum of 3.5%. Variance: For Canfor: 0%.	b
1.1.4(c)	Number of non-conformances where forest operations are not consistent with riparian management requirement as identified in operational plans	0. Variance: 0	b
1.2.1 & 1.2.2	Percent of forest management activities consistent with current Best Management Practices for Species of Management Concern	100%. Variance: 0%	b
1.2.3	Artificial regeneration will be consistent with provincial regulations and standards for seed and vegetative material use.	100%. Variance: -5%	b
1.3.1	(Duplicate) 1.1.2 Percent distribution of forest type (treed conifer, treed broadleaf, treed mixed) >20 years old across DFA	Treed conifer: 73-93% Treed Broadleaf: 1.5-6%, Treed Mixed: 5-15%. Variance: None below proposed targets.	a
	(Duplicate) 1.1.3(a) Percent late seral distribution by ecological unit across the DFA.	As per the "Landscape Biodiversity Objectives for the PG TSA" (applicable to operating areas within the PG District); and as per the Provincial Non-Spatial Old Growth Objective (applicable to TFL30). The target is to manage to the science mean with a variance to the minimum of the legal objectives. Variance: as above.	b
	(Duplicate) 1.1.3(b): Maintain a variety of young patch sizes in an attempt to approximate natural disturbance.	As per the "Landscape Biodiversity Objectives for the PG TSA". Variance: As per the "Landscape Biodiversity Objectives for the PG TSA".	b

Indicator #	Indicator Statement	Target	Risk Rank Ref
	(Duplicate) 1.2.1: Percent of forest management activities consistent with current Best Management Practices for Species of Management Concern.	100%. Variance: 0%	b
	(Duplicate) 1.2.3: Artificial regeneration will be consistent with provincial regulations and standards for seed and vegetative material use.	100%. Variance: 5%	b
	(Duplicate) 1.4.1: Percent of forest management activities consistent with management strategies for protected areas and sites of biological significance, as contained in operational plans.	100% of known forest values, knowledge and uses considered. Variance: 0%.	b
1.4.1	Percent of forest management activities consistent with management strategies for protected areas and sites of biological significance , as contained in operational plans.	100% of known forest values, knowledge and uses considered. Variance: 0%.	b
1.4.2	% of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes	100% of known forest values, knowledge and uses considered. Variance: 0%	b
2.1.1(a)	The regeneration delay, by area, for stands established annually	100% of Net Area Reforested (NAR) regenerated within 3 years (artificial) and 6 years (natural) from harvest commencement. Variance: 0%	b
2.1.1(b)	The % of block area that meets free growing requirements as identified in site plans.	100%. Variance: 0%	b
2.2.1(a)	The % of gross land base in the DFA converted to non-forested land use through forest management activities.	<3% of gross land base in the DFA. Variance: 0%	a
2.2.2	Percent of volume harvested compared to allocated harvest level.	100% over 5 years. Variance: +10%	c

Indicator #	Indicator Statement	Target	Risk Rank Ref
3.1.1	Percent of harvested blocks meeting soil disturbance objectives identified in plans.	100% of blocks meet soil disturbance objectives. Variance: 0%	b
3.1.2	% of cut blocks where post harvest CWD levels are within the targets contained in Plans.	100% of blocks harvested annually will meet targets. Variance: 10%	b
3.2.1(a)	The percentage of watersheds with active operations that have had a watershed assessment completed.	100%. Variance: 0%	a
3.2.1(b)	The percentage of active operations within high-risk watersheds that implement the recommendations of a hydrologic assessment.	100%. Variance: 0%	c
3.2.1(c)	Percentage of high hazard drainage structures in watersheds with identified water quality concerns that have mitigation strategies implemented.	100%. Variance: 0%	c
4.1.1	Areas with stand damaging agents will be prioritized for treatment	100%. Variance = -10%.	b
	(Duplicate) 1.1.3(a): Percent late seral distribution by ecological unit across the DFA	Target: As per the "Landscape Biodiversity Objectives for the PG TSA" (applicable to operating areas within the PG District); and as per the Provincial Non-Spatial Old Growth Objective (applicable to TFL30); the target to manage to the science mean with a variance to the minimum of the legal objectives. Variance: As above.	b
	(Duplicate) 1.1.3(b): Maintain a variety of young patch sizes in an attempt to approximate natural disturbance.	As per the "Landscape Biodiversity Objectives for the PG TSA". Variance: As per the "Landscape Biodiversity Objectives for the PG TSA".	b
	(Duplicate) 2.1.1(a): The regeneration delay, by area, for stands established annually.	100% of Net Area Reforested (NAR) regenerated within 3 years (artificial) and 6 years (natural) from harvest commencement. Variance: 0%	b
	(Duplicate) 2.1.1(b): The % of block area that meets free growing requirements as identified in site plans.	100%. Variance: 0%	b

Indicator #	Indicator Statement	Target	Risk Rank Ref
	(Duplicate) 2.2.1(a): The % of gross land base in the DFA converted to non-forested land use through forest management activities.	<3% of gross land base in the DFA. Variance: 0%	a
4.2.1	(Duplicate) 2.2.1(a): The % of gross land base in the DFA converted to non-forested land use through forest management activities.	<3% of gross land base in the DFA. Variance: 0%	a
5.1.1(a)	(Duplicate) 2.2.2: Percent of volume harvested compared to allocated harvest level.	100% over 5 years. Variance: +10%	c
	4.1.1(a): Areas with stand damaging agents will be prioritized for treatment.	100%. Variance: -10%	b
5.1.1(b)	Conformance with strategies for non-timber benefits identified in plans.	No non-conformances for site level plans. Variance: 0	b
5.2.1(a)	Percent of money spent on forest operations and management in the DFA provided by North Central Interior suppliers and contractors.	Target: ≥90% of dollars spent in local communities (5 year rolling average). Variance: -5%.	c
5.2.1(b)	5.2.1(b): Number of donations to the local community - applies to Canfor only.	≥6 donations; Variance: 0.	c
5.2.2	Training in environmental & safety procedures in compliance with company training plans.	100% of company employees and contractors will have both environmental & safety training. Variance = -5%.	c
5.2.3	Level of Direct & Indirect Employment	Cut control volume harvested multiplied by most current local direct and indirect employment multiplier, as a five year rolling average (3388). Variance: ≥ 86% of the target (3388 jobs)	c
5.2.4	Number of opportunities for Aboriginals to participate in the forest economy	≥ number of realized opportunities from baseline assessment (3-year rolling average). Variance = -10% of baseline	c



Indicator #	Indicator Statement	Target	Risk Rank Ref
6.1.1	Employees will receive Aboriginal awareness training	100%. Variance = -10%	c
6.1.2	Evidence of best efforts to share interests and plans with Aboriginal communities	≥3 approaches/Aboriginal community within the DFA, for 100% of management plans, as required. Variance: None.	c
6.1.3	Percent of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses, communicated through information-sharing and cultural heritage evaluations.	100% compliance with operational plans. Variance = 0%	C
6.2.1	(Duplicate) 1.4.2: % of identified Aboriginal and non-Aboriginal heritage forest values, knowledge and uses considered in the forestry planning processes	100% of known forest values, knowledge and uses considered. Variance = 0%	C
6.3.1(a)	Primary and by-products that are bought, sold, or traded with other forest-dependent businesses in the local area.	Increasing number of purchase/sale/trade relationships. Variance: +	C
6.3.2 & 6.3.3	Implementation and maintenance of a certified safety program.	100%. Variance = 0%	C
6.4.1	PAG established and maintained, and satisfaction survey implemented according to the Terms of Reference	PAG meeting satisfaction score of ≥4. Variance = 0	C
6.4.2	Number of educational opportunities for information/training that are delivered to the PAG.	≥2 (annual). Variance = none.	c
6.4.3	(Duplicate) 6.1.2: Evidence of best efforts to approach Aboriginal communities for proactive input on management plans	≥3 approaches/Aboriginal community within the DFA, for 100% of management plans, as required. Variance: None.	c
6.5.1	The number of people who attend the educational opportunities provided	≥200 people and ≥4 events. Variance: -10.	c
6.5.2	SFM monitoring report made available to the public.	SFM monitoring report available to public annually via web. Variance: None	c

## APPENDIX 6 –FORECASTS FOR OLD FOREST (INDICATORS 1.1.3 AND 4.1.1)

Table 1: Target: Science Mean

Natural Disturbance Unit (NDU)	NDU / Merged BEC	Total CFLB (ha)	Target: Science Mean		Current Status (March 2014)		Future Status (2021)		Future Status (2057)		Future Status (2107)		Future Status (2157)		Future Status (2207)		Future Status (2257)	
			%	Area (ha)	Area (ha)	% of CFLB	Area (ha)	% of CFLB	Area (ha)	% of CFLB	Area (ha)	% of CFLB	Area (ha)	% of CFLB	Area (ha)	% of CFLB	Area (ha)	% of CFLB
Boreal Foothills	A1	6,995	n/a	n/a	5,229	75	5,448	78	5,746	82	6,179	88	5,643	81	5,998	86	6,995	100
McGregor	A2	15,810	52%	8,221	6,824	43	8,484	54	4,714	30	5,022	32	5,100	32	5,139	33	5,116	32
McGregor	A3	69,726	52%	36,257	21,935	31	23,455	34	16,040	23	25,323	36	32,315	46	37,533	54	37,942	54
McGregor	A4	227,129	52%	118,107	54,194	24	62,983	28	63,739	28	63,742	28	63,569	28	63,742	28	63,686	28
Moist Interior	A5	11,467	51%	5,848	2,131	19	2,643	23	2,665	23	2,784	24	2,794	24	2,842	25	2,794	24
Moist Interior	A6	16,386	51%	8,357	4,833	29	5,043	31	3,760	23	2,813	17	3,221	20	2,982	18	2,950	18
Moist Interior	A7	4,210	25%	1,053	820	19	1,091	26	1,203	29	1,178	28	1,138	27	1,224	29	1,161	28
Moist Interior	A8	8,852	25%	2,213	1,695	19	2,191	25	1,640	19	4,373	49	5,487	62	6,091	69	6,145	69
Moist Interior	A9	34,104	25%	8,526	3,468	10	4,709	14	5,184	15	5,937	17	9,006	26	10,888	32	10,920	32
Moist Interior	A10	40,485	25%	10,121	10,692	26	11,219	28	10,874	27	13,239	33	14,374	36	14,799	37	14,923	37
Moist Interior	A11	122,329	25%	30,582	22,690	19	25,628	21	24,712	20	30,146	25	47,930	39	54,484	45	54,618	45

**Prince George Defined Forest Area SFMP –August 2014**

Moist Interior	A12	161,589	25%	40,397	26,305	16	34,497	21	28,925	18	33,546	21	44,630	28	66,141	41	67,379	42
Moist Interior	A13	359,587	25%	89,897	65,041	18	74,851	21	58,943	16	65,178	18	85,352	24	118,444	33	118,632	33
Wet Mountain	A14	109,072	87%	94,892	87,715	80	90,312	83	87,352	80	91,493	84	92,302	85	92,290	85	92,468	85
Wet Mountain	A15	13,921	87%	12,111	9,440	68	10,026	72	10,466	75	10,774	77	10,800	78	10,800	78	10,800	78
Wet Mountain	A16	24,148	87%	21,009	8,277	34	8,842	37	8,863	37	8,863	37	9,523	39	9,597	40	9,581	40
Wet Mountain	A17	116,507	87%	101,361	78,394	67	80,180	69	80,099	69	80,125	69	80,236	69	80,130	69	80,195	69
Wet Trench	A18		84%	-					-		-		-		-		-	
Wet Trench	A19	63,767	84%	53,564	51,478	81	52,162	82	47,573	75	48,066	75	50,934	80	51,156	80	51,776	81
Wet Trench	A20	99,038	84%	83,192	84,689	86	85,934	87	80,791	82	79,794	81	84,524	85	84,618	85	85,152	86
Wet Trench	A21	116,382	84%	97,761	68,669	59	69,986	60	69,939	60	69,939	60	69,939	60	69,940	60	69,939	60
Wet Trench	A22	28,689	80%	22,951	19,239	67	19,834	69	19,880	69	19,825	69	19,873	69	19,869	69	19,803	69
Wet Trench	A23	151,965	80%	121,572	92,646	61	95,589	63	95,494	63	95,330	63	95,574	63	95,527	63	95,546	63
Wet Trench	A24	151,760	80%	121,408	34,006	22	36,938	24	37,820	25	38,645	25	38,597	25	38,619	25	38,646	25
Wet Trench	A25	135,489	80%	108,391	70,026	52	72,954	54	73,376	54	73,364	54	73,306	54	73,325	54	73,202	54
<b>Totals</b>		<b>2,089,405</b>			<b>830,438</b>	<b>40</b>	<b>884,999</b>	<b>42</b>	<b>839,800</b>	<b>40</b>	<b>875,679</b>	<b>42</b>	<b>946,166</b>	<b>45</b>	<b>1,016,177</b>	<b>49</b>	<b>1,020,369</b>	<b>49</b>

**Table 2: Variance: Targets from PGTA Biodiversity Order**

Merged Biogeoclimatic Unit	Age of Old (years)	Minimum area of old forest (ha)	Old Forest Area (ha)						
			2007	2027	2057	2107	2157	2207	2257
A1 Boreal Foothills - Mountain ESSFmv 2	140	2,405	3,939	4,635	4,889	5,257	4,801	5,103	6,227
A2 McGregor Plateau ESSFwk 2	140	2,650	5,128	4,771	2,651	2,824	2,868	2,890	2,877
A3 McGregor Plateau SBS mk 1	120	8,133	22,618	12,325	8,429	13,307	16,981	19,723	19,938
A4 McGregor Plateau SBS wk 1	140	54,110	53,811	53,408	54,049	54,052	53,905	54,052	54,004
A5 Omineca - Mountain ESSFmv 3	140	3,591	5,561	3,397	3,426	3,579	3,591	3,653	3,591
A6 Moist Interior - Mountain ESSFwk 1	140	4,668	8,163	8,381	6,249	4,675	5,353	4,956	4,903
A7 Moist Interior - Plateau SBS mh	120	877	1,721	2,617	2,885	2,824	2,729	2,935	2,784
A8 Moist Interior - Plateau SBS mc 2	120	1,063	3,790	533	399	1,064	1,335	1,482	1,495
A9 Moist Interior - Plateau SBS mw	120	3,881	6,083	3,509	3,863	4,424	6,711	8,113	8,137
A10 Moist Interior - Plateau SBS wk 1	120	6,411	14,106	8,315	8,059	9,812	10,653	10,968	11,060
A11 Moist Interior - Plateau SBS dw 2	120	14,796	35,284	15,300	14,753	17,997	28,614	32,527	32,607
A12 Moist Interior - Plateau SBS dw 3	120	21,069	45,343	32,756	27,465	31,853	42,377	62,802	63,978
A13 Omineca - Valley SBS mk 1	120	43,220	107,705	63,723	50,180	55,488	72,663	100,835	100,995
A14 Wet Mountain ESSFwk 2	140	77,202	133,395	125,514	121,400	127,155	128,279	128,263	128,510

A15 Wet Mountain ESSFwc 3	140	23,211	24,047	25,440	26,557	27,338	27,405	27,405	27,405
A16 Wet Mountain SBS wk 1	140	8,814	12,981	8,794	8,815	8,815	9,471	9,545	9,529
A17 Wet Mountain SBS vk	140	57,375	79,903	57,321	57,263	57,282	57,361	57,285	57,332
A18 Wet Trench - Mountain ESSFwcp3	140	26,884	31,532	31,621	30,756	31,075	32,004	32,024	32,106
A19 Wet Trench - Mountain ESSFwk 2	140	31,601	55,675	48,288	44,040	44,496	47,151	47,356	47,930
A20 Wet Trench - Mountain ESSFwc 3	140	79,418	89,967	87,621	82,378	81,361	86,184	86,280	86,824
A21 Wet Trench - Mountain ESSFwk 1	140	54,404	67,513	54,441	54,404	54,404	54,404	54,405	54,404
A22 Wet Trench - Valley ICH wk 3	140	14,275	17,045	14,242	14,275	14,236	14,270	14,267	14,220
A23 Wet Trench - Valley ICH vk 2	140	76,625	88,576	76,539	76,463	76,331	76,527	76,489	76,504
A24 Wet Trench - Valley SBS wk 1	140	37,308	36,101	35,659	36,511	37,307	37,261	37,282	37,308
A25 Wet Trench - Valley SBS vk	140	69,245	69,413	68,847	69,245	69,234	69,179	69,197	69,081

**APPENDIX 7 –FORECASTS FOR YOUNG PATCH SIZE DISTRIBUTION (INDICATOR 1.1.3B)**

**FUTURE - 2021**

PATCH SIZE	CFLB Area (ha)	2021 Forecast Area (ha)					2021 Forecast %					Target %				
		Young Forest	< 50	50-100	100 - 1000	> 1000	< 50	50-100	100 - 1000	> 1000	Total	< 50	50-100	100 - 1000	> 1000	Total
Boreal Foothills - Mountain	6,995															
McGregor Plateau	312,664	239,364	6,225	7,935	59,207	165,997	3%	3%	25%	69%	100%	10%	5%	45%	40%	100%
Moist Interior Plateau - Omineca Mountain	27,853	8,869	153	238	2,912	5,566	2%	3%	33%	63%	100%	5%	5%	20%	70%	100%
Moist Interior Mtn	731,155	41,814	1,586	2,519	19,215	18,493	4%	6%	46%	44%	100%	20%	10%	30%	40%	100%
Wet Mtn	263,647	32,828	1,514	3,350	20,478	7,485	5%	10%	62%	23%	100%	20%	10%	60%	10%	100%
Wet Trench Valley	279,187	7,363	244	295	4,676	2,149	3%	4%	64%	29%	100%	20%	10%	60%	10%	100%
Wet Trench Mtn	467,904	14,721	211	621	6,366	7,524	1%	4%	43%	51%	100%	20%	10%	60%	10%	100%
<b>Total</b>	<b>2,082,409</b>	<b>344,958</b>	<b>9,933</b>	<b>14,958</b>	<b>112,853</b>	<b>207,214</b>	<b>3%</b>	<b>4%</b>	<b>33%</b>	<b>60%</b>	<b>100%</b>					

**FUTURE - 2041**

PATCH SIZE	CFLB Area (ha)	2041 Forecast Area (ha)					2041 Forecast %					Target %				
		Young Forest	< 50	50-100	100 - 1000	> 1000	< 50	50-100	100 - 1000	> 1000	Total	< 50	50-100	100 - 1000	> 1000	Total
Boreal Foothills - Mountain	6,995															
McGregor Plateau	312,664	169,749	29,340	15,796	41,989	82,624	17%	9%	25%	49%	100%	10%	5%	45%	40%	100%

Moist Interior Plateau - Omineca Mountain	27,853	8,869	1,100	3,039	3,363	1,366	12%	34%	38%	15%	100%	5%	5%	20%	70%	100%
Moist Interior Mtn	731,155	56,872	4,060	1,730	4,208	46,873	7%	3%	7%	82%	100%	20%	10%	30%	40%	100%
Wet Mtn	263,647	79,817	6,307	3,823	13,089	56,599	8%	5%	16%	71%	100%	20%	10%	60%	10%	100%
Wet Trench Valley	279,187	8,229	1,088	746	3,477	2,918	13%	9%	42%	35%	100%	20%	10%	60%	10%	100%
Wet Trench Mtn	467,904	7,542	1,564	878	3,522	1,579	21%	12%	47%	21%	100%	20%	10%	60%	10%	100%
<b>Total</b>	<b>2,089,405</b>	<b>331,078</b>	<b>43,459</b>	<b>26,012</b>	<b>69,648</b>	<b>191,960</b>	<b>13%</b>	<b>8%</b>	<b>21%</b>	<b>58%</b>	<b>100%</b>					