

**MORICE DEFINED FOREST AREA**  
**SUSTAINABLE FOREST MANAGEMENT PLAN**



**May 2014**

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# TABLE OF CONTENTS

<b>SIGNATORIES .....</b>	<b>IV</b>
<b>COMMITMENTS TO SUSTAINABLE FOREST MANAGEMENT .....</b>	<b>VI</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>XI</b>
<b>1.0 INTRODUCTION &amp; OVERVIEW .....</b>	<b>1</b>
<b>2.0 THE DEFINED FOREST AREA .....</b>	<b>3</b>
2.1 AREA DESCRIPTION .....	3
2.1.1 Overview.....	3
2.1.2 Communities.....	3
2.1.3 Area Economy.....	5
2.1.4 Environment .....	5
2.1.5 Species at Risk.....	6
2.1.6 Forest Use .....	7
2.1.7 Forest Landbase.....	7
<b>TABLE 1: AREA SUMMARY FOR CANFOR DFA.....</b>	<b>8</b>
2.2 MOUNTAIN PINE BEETLE.....	10
2.2.1 Overview.....	10
2.2.2 Area Affected .....	10
2.2.3 Strategy & Response.....	10
2.2.4 The Extent of Current & Future Infestations.....	11
2.2.5 Summary of the Chief Forester’s AAC Determination for the Morice TSA .....	11
2.2.6 Factors Influencing the Severity of Attack.....	11
2.2.7 Environmental Impacts of the Beetle Infestation.....	12
2.2.8 Outlook.....	12
2.3 OTHER MAJOR FACTORS AT PLAY IN THE DFA.....	14
2.4 LICENSEE OPERATING AREAS .....	15
<b>3.0 THE PLANNING PROCESS .....</b>	<b>17</b>
3.1 THE CSA CERTIFICATION PROCESS .....	17
3.1.1 Public/Aboriginal Involvement: Performance Requirements & Indicators .....	17
3.1.2 Public Review of Annual Reports & Third Party Audits .....	18
3.1.3 Internal Infrastructure: Systems Components.....	18
3.1.4 CSA Registration .....	19
3.2 THE MORICE SFM PLANNING PROCESS .....	20
3.2.1 Licensee Participation.....	20
3.2.2 Public Participation .....	20
<b>4.0 STRATEGY GUIDING THE SFMP .....</b>	<b>22</b>
4.1 SFMP STRATEGY FOR THE DFA .....	22
4.2 ADDITIONAL GUIDANCE.....	22
<b>5.0 INDICATORS &amp; INDICATOR MATRICES.....</b>	<b>23</b>

5.1	OBJECTIVES, INDICATORS & TARGETS.....	23
5.2	BASE LINE FOR INDICATORS .....	23
5.3	CURRENT STATUS OF INDICATORS .....	23
5.4	FORECASTING .....	23
5.5	REGIONAL FORECASTING RELATED TO THE SFMP.....	24
5.6	LEGAL REQUIREMENTS .....	25
5.7	INDICATORS IN THE SFMP.....	26
5.7.1	1.1.1 Ecosystem by type.....	26
5.7.2	1.1.2 Forest area by type or species composition.....	30
5.7.3	1.1.3 Forest area by seral stage or age class.....	32
5.7.4	1.1.4. Degree of within-stand structural retention .....	37
5.7.5	1.1.5 Degree of habitat connectivity.....	39
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; 1.4.1. Proportion of identified sites with implemented management strategies. ....	42
5.7.7	1.2.3 Proportion of regeneration comprised of native species; 1.3.1. Genetic diversity .....	45
5.7.8	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. ....	48
5.7.9	2.1.1. Reforestation Success .....	50
5.7.10	2.2.1 Additions and deletions to the forest area .....	52
5.7.11	2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested; 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA.....	55
5.7.12	3.1.1 Level of soil disturbance.....	59
5.7.13	3.1.2 Level of downed woody debris.....	61
5.7.14	3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance .....	63
5.7.15	5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA .....	67
5.7.16	5.2.1 Level of investment in initiatives that contribute to community sustainability.....	69
5.7.17	5.2.2 Level of investment in training and skills development .....	71
5.7.18	5.2.3 Level of direct and indirect employment .....	73
5.7.19	5.2.4 Level of Aboriginal participation in the forest economy .....	75
5.7.20	6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights 77	
5.7.20	6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans. ....	79
6.4.3	Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities.....	79
5.7.21	6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur.....	81
5.7.22	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.....	84

5.7.23	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.....	86
	6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved.....	86
5.7.24	6.4.1 Level of participant satisfaction with the public participation process.....	88
5.7.25	6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general.....	90
5.7.26	6.5.1 Number of people reached through educational outreach.....	92
5.7.27	6.5.2 Availability of summary information on issues of concern to the public.....	94
<b>6.0</b>	<b>LINKS TO OTHER PLANNING PROCESSES.....</b>	<b>96</b>
6.1	STRATEGIC PLANS.....	96
6.2	PLANS, POLICIES AND STRATEGIES THAT RELATE TO THE SFM PLAN.....	96
	<b>LIST OF ACRONYMS.....</b>	<b>98</b>
	<b>GLOSSARY.....</b>	<b>100</b>
	<b>APPENDIX 1 – LIST OF REFERENCES.....</b>	<b>110</b>
	<b>APPENDIX 2 – SUMMARY OF PUBLICLY DEVELOPED VALUES, OBJECTIVES AND INDICATORS.....</b>	<b>112</b>
	<b>APPENDIX 3 – SPECIES OF MANAGEMENT CONCERN.....</b>	<b>125</b>
	<b>APPENDIX 4 – NON-REPLACABLE FOREST LICENSE (NRFL) RISK ASSESSMENT.....</b>	<b>128</b>
	<b>APPENDIX 5 – FORECASTING TABLES.....</b>	<b>136</b>

## LIST OF TABLES

Table 1: Area Summary for Canfor DFA.....	8
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## LIST OF FIGURES

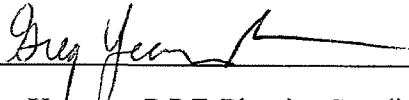
<i>Figure 1: Map of the Morice Timber Supply Area and the Operating Areas within it.....</i>	4
<i>Figure 2: Estimated Observed and Projected Annual Red-Attack in the Morice TSA (Old and Current -2011).....</i>	13
<i>Figure 3: Current Estimate of Observed and Projected Cumulative Attack in the Morice TSA (2011).....</i>	13

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## SIGNATORIES


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The following have committed to implement and maintain on a continuous improvement basis, the Morice Sustainable Forest Management Plan.

  
\_\_\_\_\_  
Greg Yeomans, R.P.F. Planning Coordinator

Sept. 11, 2014  
Date

Canadian Forest Products Ltd. Forest Management Group.

  
\_\_\_\_\_  
Peter Baird, RPF. General Manager

Sept. 12/14  
Date

Canadian Forest Products Ltd. Forest Management Group

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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 Sustainable Forest Management Commitments will detail the commitments to Sustainable Forest Management (SFM) for the Morice 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







### **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.

### **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", written over a horizontal line.

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 Morice Public Advisory Group**

Naomi Himech – First Nations

Frank McDonald - Recreation

Andy Meints – Contract Logging

Bill Miller – Director Regional District of Bulkley Nechako

Russ Skillen - Trapper

Steven Wright – Forestry consulting, Woodlots

Robson Herman – Nadina Community Futures

Alex Walsh - Labour

### **Canfor Forest Management Group**

Lars Hobenshield, RPF– Forestry Supervisor

Greg Yeomans, RPF – Planning Coordinator

Peter Baird, RPF– Planning Manager

### **Facilitator & Support**

Alan Wiensczyk , RPF – Trout Creek Collaborative Solutions

Tanya Milner, RPF – Note Taker

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## EXECUTIVE SUMMARY

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Between 2000 and 2005 forest tenure holders ("licencees") along with a group of public and Aboriginal representatives (the Sustainable Forest Management (SFM) Public Advisory Group), developed a Sustainable Forest Management Plan (SFMP)<sup>1</sup> for the Morice Defined Forest Area (DFA).

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

The SFMP includes a set of values, objectives, indicators and targets that address environmental, economic and social aspects of forest management in the Morice DFA. The plan is based on the Canadian Standards Association (CSA) Sustainable Forest Management; Requirements and Guidance, which is one of the primary certification systems currently being used in British Columbia. A 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. Working with the PAG, this SFMP has undergone substantive revisions in 2011 to reflect the requirements of the newest CSA standard's requirements (CSA Z809-08)

Irrespective of changes occurring to the CSA SFM standard, the SFMP is an evolving document that is reviewed and revised annually with the PAG to address changes in forest conditions and local community values. Each year the PAG reviews an annual report prepared by Canfor to assess achievement of indicators and targets. 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 and will be audited to the standards of CSA Z809.

The Canfor SFM certification website contains the latest information on the Morice DFA process, including the SFM Plan, and can be viewed at:

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

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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 Standard 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, defines values, objectives, indicators 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) such as the PAG, composed of a cross-section of local interests, including commercial and non-commercial recreation, tourism, ranching, forest contactors, conservation, mining, communities, small business, and Aboriginals, fulfill this role.

Canfor in the Morice DFA, working with the PAG, has developed, maintained and improved, the Morice DFA SFMP based on the CSA Z809 standard.<sup>2</sup>

Version 1.0 of the Morice Timber Supply Area (TSA) SFM Plan completed in October 2002 through Tweedsmuir Forest Ltd., a subsidiary company of licensees engaged in the Morice and Lakes Timber Supply Areas Innovative Forest Practices Agreement (M&L IFPA). The provincial IFPA program was designed to enable licensees to explore new forest management ideas in an operational setting to enhance timber supplies, community stability and social and environmental values. The M&L IFPA was awarded in 1999 and is a partnership between six regional forest licensees (Babine Forest Products, Canadian Forest Products, Decker Lake Forest Products, Fraser Lake Sawmills, Houston Forest Products, and L&M Lumber) and BC Timber Sales in both the Morice and Lakes Timber Supply Areas. The SFM Plan was developed using innovative approaches in public involvement, forest productivity and ecosystem-based management, and is the vehicle by which achievement of IFPA goals is enabled.

This most recent SFMP revision reflects updated for Canfor's new operating area, removal of BCTS from the plan and updates to the forecasting in this plan. The new operating area reflects a trade with West Fraser where Canfor gave up their licenses in Quesnel for a cut of 324,500 m<sup>3</sup> in the Morice. The trade reflects expected fall downs is cuts due to Mountain Pine Beetle.

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, social, and economic values of the DFA. The plan is consistent with other strategic plans such as the Morice Land and Resource Management Plan (LRMP) and the Forest Stewardship Plan (FSP).

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

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<sup>2</sup> <http://www.shopcsa.ca/onlinestore/GetCatalogItemDetails.asp?mat=2419617>

More information about the DFA certification process, Sustainable Forest Management Planning, meeting summaries, annual reporting and maps can be obtained at the Canfor website: <http://www.canfor.com/responsibility/environmental/certification>



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## 2.0 THE DEFINED FOREST AREA

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### 2.1 Area Description<sup>3</sup>

#### 2.1.1 Overview

The Morice DFA is contained wholly within the licensee's operating areas within the Morice TSA (Figure 1). The Canfor DFA area is 693,669 ha.

The Morice TSA is situated on the edge of British Columbia's Interior Plateau. The area is bounded by the eastern slopes of the Coast Mountains to the west, Tweedsmuir Park and the head waters of the Nechako Reservoir to the south and a large portion of Babine Lake to the northwest. The Bulkley River valley winds its way through the centre of the TSA, providing an access corridor linking Prince George to the northwest coast. The TSA is approximately 1.5 million hectares, the majority of which is Crown land. The Morice TSA forms the western part of the Nadina Forest District.

#### 2.1.2 Communities

The plan area supported an estimated population of 4,511 residents in 2011<sup>4</sup>. The focal point for much of the economic activity in the Morice is the largest community of Houston (population 3,147 in 2011). Other communities include the Village of Granisle (population 303 in 2011), and the Regional District of Bulkley- Nechako electoral area G (population 975 in 2011) which contains the rural settlements of Topley, Buck Flats, Perow. and Tachet Reserve (population 81 in 2011) Farms and ranches are dispersed across the plan area, especially along Highway 16 and from Owen Lake to Francois Lake. The population for the plan area has declined by about 4.0% from the 2006 census (4701- 4511 = 190)

There are five First Nations with traditional territory within the Morice TSA – the Cheslatta Carrier First Nation, Office of the Wet'suwet'en, Wet'suwet'en First Nation, Lake Babine Nation and Yekooche First Nation. Each has submitted a Statement of Intent to the Treaty Commission. There are 17 Indian Reserves scattered throughout the TSA area but only Fort Babine and Tachet (both are part of the Lake Babine Nation) have established year-round communities.

There are two tribal councils affiliated with First Nations in the Morice TSA area. The Office of the Wet'suwet'en Hereditary Chiefs is based in Smithers and operates with a basis on the hereditary system of governance. The Carrier-Sekani Tribal Council is based out of Prince George and is an over-arching organization of elected First Nation chiefs of the Carrier-Sekani.

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<sup>3</sup> Description is primarily excerpts from "Morice Land and Resource Management Plan, February, 2007"

<sup>4</sup> Reference: 2011 Census

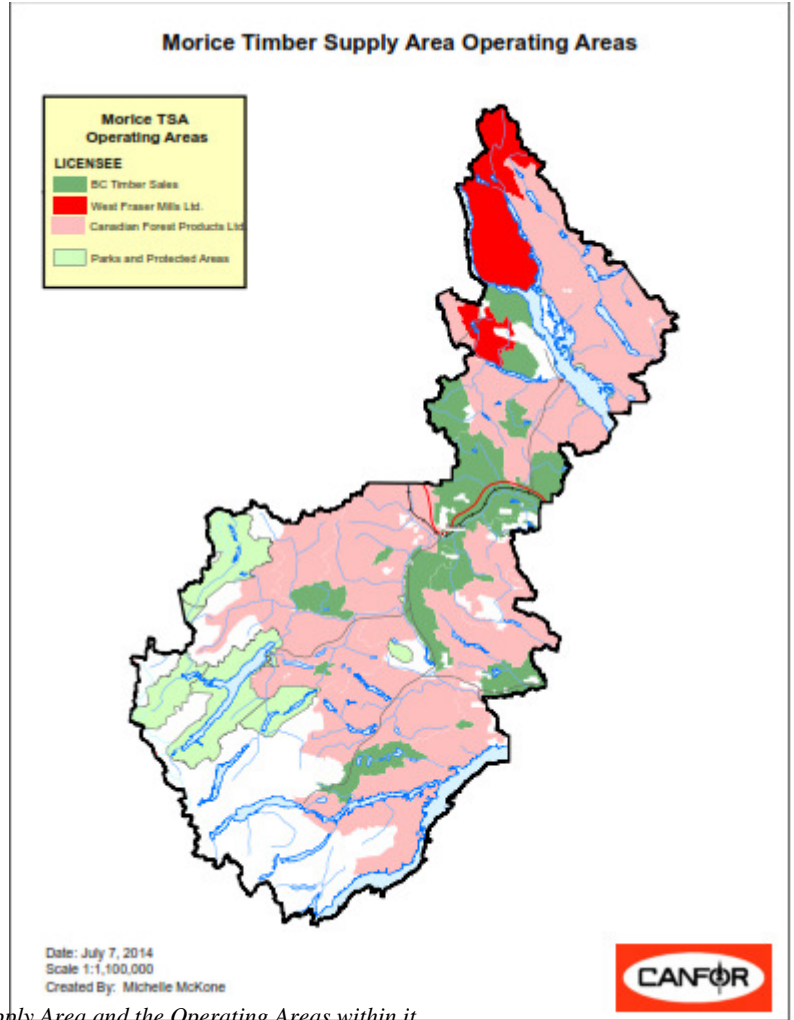
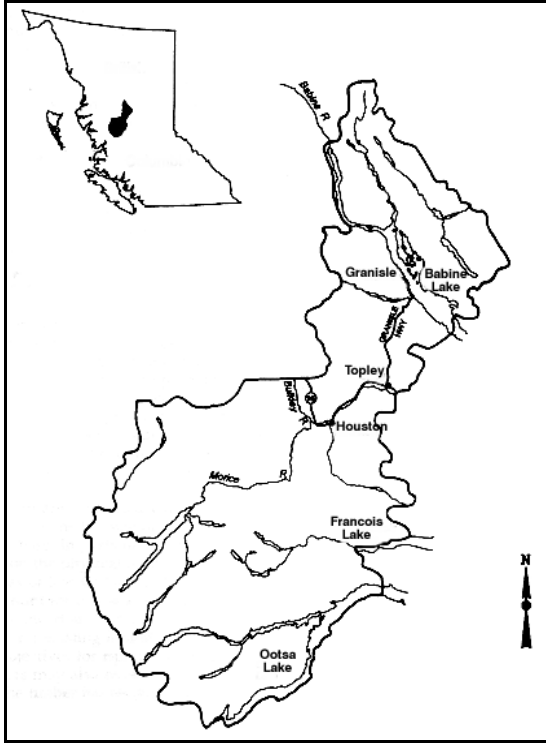


Figure 1: Map of the Morice Timber Supply Area and the Operating Areas within it.

### *2.1.3 Area Economy*

The economy of the Morice area is mainly forestry dependant. Direct employment in the area results from woodlands (e.g. harvesting, silviculture) and processing while additional employment occurs as a result of forest sector purchases of services and products to carry out business. The majority of the volume harvested within the TSA is processed locally at the Canfor mill and the West Fraser mill in Smithers and several remanufacturing facilities, small sawmills and the Houston Pellet Plant. The smaller facilities generally rely on dry and waste wood purchased from the large mills or acquired through BC Timber Sales, community salvage or woodlot harvest. Forestry activities within the area support employment throughout northern British Columbia. 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, panel board and pellet production in several facilities within 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, agriculture, tourism, and recreation.

Currently there is a single active, large-scale mine, Huckleberry Mine, which began operations in 1997. Approximately two-thirds of the area is identified as having high or extreme metallic mineral potential and mining has the potential to play a larger economic role in the area in the future.

Agricultural activity contributes to the economy of the area and is primarily related to forage and beef production. Other activities include food production of lamb, pork, dairy and eggs, and crop production of hay, haylage, grain, vegetables, small fruits and bedding plants. Several local producers process a portion of their poultry and livestock for sale locally, supplementing this with wild game processing for local residents and visiting hunters.

Tourism is playing an increasing role in the economic well-being of the area. Efforts to promote tourism have included the marketing of Houston as the “Steelhead Capital,” as well as support for infrastructure development and tourism-related businesses. With an increasing number of visitors being drawn to the area’s fishing and outdoor recreation opportunities, numerous new businesses have emerged within the retail trade and hospitality industries.

### *2.1.4 Environment*

The topography of the area is rolling and gentle in the north and east, becoming more mountainous in the southwest. The climate reflects the geography and is transitional between the coast (southwest) and the interior (north and east). Summers are cool and winters are cold; the average July temperature in Houston is 21.4° Celsius, and the average January temperature is – 7.4° Celsius. The average annual rainfall is 305 millimetres and total annual snowfall is 1640 millimetres.

Six major watersheds drain the area and contribute to both the Skeena and Fraser river systems. Major rivers include the Bulkley, Morice and Nadina. Numerous lakes of varying sizes are scattered across the plan area. Babine Lake, which bisects the northern part of the plan area, is the longest natural freshwater lake in British Columbia. The Ootsa Lake complex in the south, formed as part of the Nechako reservoir, is the second largest fresh water body in the plan area.

There is a diversity of ecosystem types across the area as a result of the range of geographic and climatic conditions, ranging from rolling hills to mountains and coastal to interior conditions. Five biogeoclimatic zones and nine variants have been described and mapped within the Morice. Vegetation communities range from lower elevation deciduous and mixed forests through to

conifer dominated pine, spruce and balsam forests at mid to upper elevations. Lodgepole-pine-leading forests cover more than half of the forested landbase with spruce stands on richer, moister sites at lower and mid-elevations. Shrub and forb dominated wetland complexes are characteristic of the interior plateau terrain. Non-forested alpine tundra is found in high elevation areas, particularly in the southwestern corner of the area. Forest ecosystems are particularly productive in the coastal southwest due to a warmer and moister climate relative to other parts of the area.

### *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 considered impacted by forest management activities are called “Species of Management Concern”

#### Mountain Caribou

Under British Columbia’s risk classification system, caribou in the Morice DFA are blue listed, which means that the population is a conservation concern but is not under immediate threat. Under COSEWIC, caribou in the DFA are threatened and are designated under SARA to have a recovery strategies developed. Caribou populations have low reproductive rates; extra mortality can readily cause population declines.

Three caribou herds use habitats within the DFA: the Takla, Tweedsmuir and Telkwa herds. The Takla caribou herd includes approximately 100 animals that live mostly north of the DFA. In 2001 the 25,000-hectare Mount Blanchet Provincial Park just north of the plan area was established largely to protect habitat of this herd. The Takla herd primarily uses habitats at 1200m elevations or higher all year round. Most winter food appears to be arboreal lichens in high elevation forest, and terrestrial lichens in the alpine. This herd does not appear to use terrestrial lichens in low elevation forested habitats, due to the lack of this habitat in the area.

The Tweedsmuir-Entiako caribou herd currently includes about 300 animals; the population appears to be declining. Only the northernmost 10% of the habitat used by this herd lies inside the DFA. This herd is migratory and winters to the south of the DFA in the vicinity of Entiako Lake, east of Tweedsmuir Park. In late winter and spring, the herd migrates west and north to widely scattered habitats, both forested and alpine. Some caribou migrate into the DFA for the summer by crossing Ootsa Lake in the vicinity of Whitesail Reach. Some remain near Ootsa Lake the whole summer, and others continue on to habitats further west and north. The plan area contains important calving habitat on islands in Whitesail Reach, in highlands surrounding Troitsa Lake and in the eastern portion of the Sibola Range, north of Tahtsa Lake. Spring and summer foods in the LRMP area include grass, forbs and sedges, as well as terrestrial and arboreal lichen.

The Telkwa herd currently includes about 75 animals, and appears to be increasing since the herd was supplemented by moving 32 animals into the area in 1997-98. Prior to the introduction of new animals, the herd had been declining for several decades. Roughly half of the range of the Telkwa herd lies inside the DFA. The herd is generally not migratory, but habits vary between years and among animals. Generally, most animals remain in the alpine or subalpine forest all year round. Winter food for the Telkwa herd probably consists of mostly arboreal lichens in high elevation forests, and terrestrial lichens in alpine or sub-alpine locations. Spring, summer and fall foods probably include grass, forbs and sedges, as well as substantial amounts of terrestrial lichen.

### *2.1.6 Forest Use*

The forests of the Morice 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.

Early seral and open mature forests, especially in the drier subzones, are used for seasonal grazing of livestock. 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. The Morice TSA land base provides ample opportunity for hunting and fishing pursuits. The watersheds that characterize the Morice TSA are world renowned for the combination of variety of species, large size of fish, fly-fishing opportunities, and pristine wilderness situations.

The Morice TSA has abundant supplies of high quality surface water in rivers, streams, wetlands and lakes. Groundwater supplies are also generally of high quality.

There are many elements, which contribute to the biological diversity and the variety and abundance of wildlife in the Morice TSA. The geographic proximity of coastal and interior climate factors has shaped the natural diversity of the flora and fauna within the various ecosystems.

### *2.1.7 Forest Landbase*

The Morice TSA covers about 1.48 million hectares in total, of which approximately 63 percent—929,291 hectares—is crown forest management land base (FMLB). About 256,057 hectares of the Forest Management Land Base (FMLB) area in the Morice TSA 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 46 percent of the total TSA area is included in the current timber harvesting land base of 674,902 hectares. A detailed area net down for Canfor's DFA in the Morice TSA is found in Table 1.

**Table 1: Area Summary for Canfor DFA<sup>5</sup>**

Morice Netdown Version (16May2014)				
Land classification	Total area	Canfor	Other licensee	Comfor
Total area (including parks)	1,477,439	661,339	800,527	15,573
Land not managed by BCFS	61,824	10,421	51,399	4
Non-productive areas (including water)	477,668	79,775	396,374	1,519
Existing Roads	8,656	6,408	2,107	141
Total Crown forest land base	929,291	564,735	350,647	13,909
Parks and protected areas	54,339	2,285	52,023	31
Fulton River protected area	0		0	
Northern Caribou Calving Range	1,648	1,648		
Preservation VQO Areas	4,030	2,183	1,847	
Northern Caribou (Telkwa) Core Area	1,780	1	1,779	
Goats UWR Core Area	18,561	8,927	9,634	
Environmentally Sensitive Area	35,873	18,847	16,488	538
Unstable Terrain	3,804	2,500	1,304	
Physically Inoperable Areas	17,020	10,730	5,141	1,149
Low Site Areas	65,011	34,415	30,596	
Problem Forest Types (deciduous, hemlock)	36,369	14,992	20,541	836
	0			
Partial Reductions	0			
Steep slopes	58	29	20	9
Riparian reserve zones	17,564	11,485	5,691	388
Current Timber harvesting land base	674,902	456,697	205,583	12,622

Note the Comfor community forest is not part of the Morice Timber Supply area, but it is part of this plan.

<sup>5</sup> Reference: Data for table provided from Ecora timber supply shadow analysis July 2014.



## 2.2 Mountain Pine Beetle

### 2.2.1 Overview

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

- Morice TSA – MFR Rationale for Allowable Annual Cut Determination. 2008<sup>6</sup>.
- Morice TSA – MFR Timber Supply Review Public Discussion Paper. 2007<sup>7</sup>.
- Beetle Facts, MFLNRO website<sup>8</sup>.
- Forest Health Strategy - Nadina District, June 2011<sup>9</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>10</sup>

Mountain pine beetle is considered a very high priority forest health factor in the Morice TSA within which the DFA is located. Approximately 51% of the stands in the Morice Timber Harvesting Landbase (THLB) are dominated by lodgepole pine. The majority of these stands are greater than 60 years of age and are susceptible to MPB attack (if not already attacked).

While the forests of the Morice DFA have more species diversity than many TSAs in the northern interior, lodgepole pine still represents 54 million cubic metres or 43 percent of the total volume within the THLB. The majority of this pine volume or approximately 50 million cubic metres, is mature or over mature, that is 60 years old or greater, and susceptible to the beetle epidemic within the TSA.

The provincial overview flight estimated that 1.2 million hectares in the Nadina District were affected by MPB in 2005 and 2006 and 1.1 million in 2007 which may indicate the epidemic has peaked in the Nadina District.

### 2.2.3 Strategy & Response

The Nadina District 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. Management objectives concerning MPB include:

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<sup>6</sup> Reference: <http://www.for.gov.bc.ca/hts/tsa/tsa20/>

<sup>7</sup> Reference: <http://www.for.gov.bc.ca/hts/tsa/tsa20/>

<sup>8</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>9</sup> Reference: Nadina District Forest Health Strategy 2011-2012, June 2011

<sup>10</sup> Description is primarily excerpts from "Forest Health Strategy - Nadina District, June 2011"



- Ensure that Holding and Salvage strategy targets are met;
  - Holding - use a mix of small and large blocks to maintain the infestation in a static mode by targeting infested stands.
  - Salvage - minimize unsalvaged losses by harvesting beetle-killed trees through large-scale operations.
- Continue annual monitoring of beetle rate of spread;
- Reduce negative impacts of bark beetle infestations and salvage operations on biodiversity and other forest values;
- Direct harvest into lodgepole 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>11</sup>, the goals and management direction of the Morice LRMP, and the Nadina Mid-Term Mitigation Strategy<sup>12</sup>.

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 Morice TSA is currently following the Salvage strategy, with 3 Beetle Management Units (in the northern part of the TSA) in the Holding 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 AAC determination for the DFA (2007).

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

Effective February 1, 2008, the new AAC for the Morice TSA was set at 2,165,000 cubic metres per year. This represents an administrative adjustment of 203 883 cubic metres or approximately 10 percent to the previous AAC to account for the inclusion of the endemic dead potential volume, and includes a non-pine species partition, equating to 550,000 cubic metres per year.

#### *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., cutblock size/adjacency and fire control) have contributed to an accumulation of old pine forest above historical levels. Once lodgepole pine trees are mature (generally older than 80 years), they are highly susceptible to attack by the pine beetle, particularly during times of prolonged favourable weather conditions. Experts concur that moderated climate conditions

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<sup>11</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)

<sup>12</sup> Reference: Nadina Mid-Term Mitigation Strategy 2009

coupled with the increasing amount of susceptible, mature lodgepole forests has led to the current unprecedented mountain pine beetle outbreak.

### *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 lodgepole 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 1.6 million cubic metres of pine will be killed in the Morice TSA. The projected kill for 2012 is 1.4 million cubic metres; and by 2016 it is estimated that the cumulative kill will be approximately 63 percent of the total mature pine volume. 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 by 2021.

The most recent projection (2011) of the cumulative amount of pine volume killed in the Morice TSA portion of the Nadina 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 32 million m<sup>3</sup> have been killed as of 2011 compared to a projection in 2007 of 39 million m<sup>3</sup> killed in 2011. It is estimated that the total amount of volume killed in 2020 will be 36.4 million m<sup>3</sup> compared to an estimate of 44.6 million m<sup>3</sup> in 2020 from the 2007 projection.

Our cruises and field recces do not support this level of attack. In addition, there are extensive areas of green pine in the TSA with no sign of beetle activity. An updated inventory is planned in the next few years which is needed to verify appropriate strategies. These concerns have been raised to the Chief Forester in his determination of the Timber Supply review for the Morice TSA.

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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>

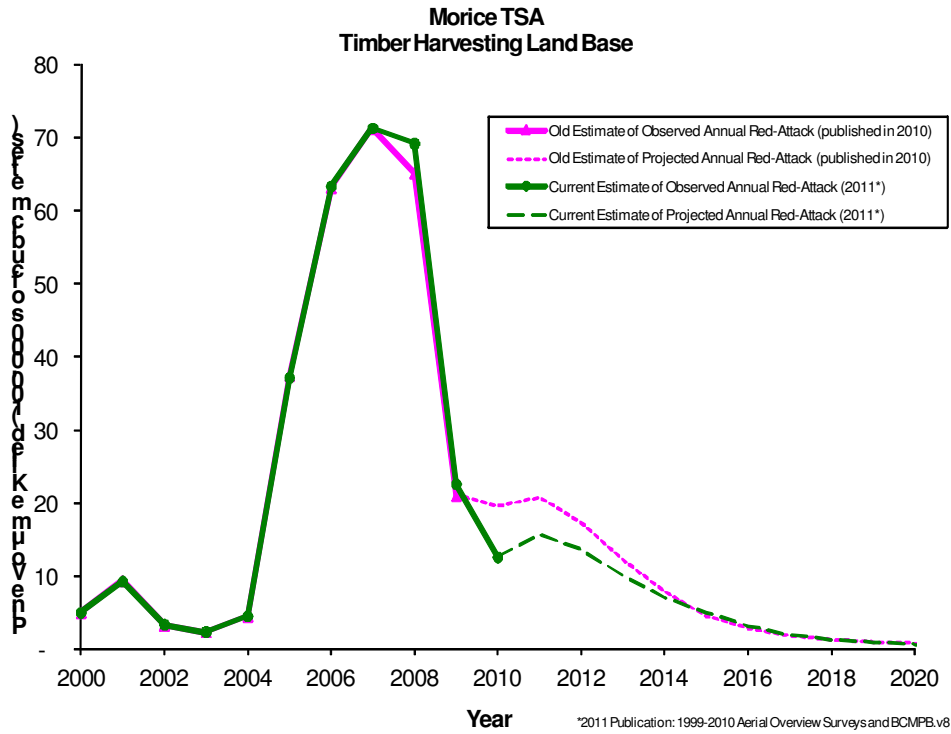


Figure 2: Estimated Observed and Projected Annual Red-Attack in the Morice TSA (Old and Current -2011).

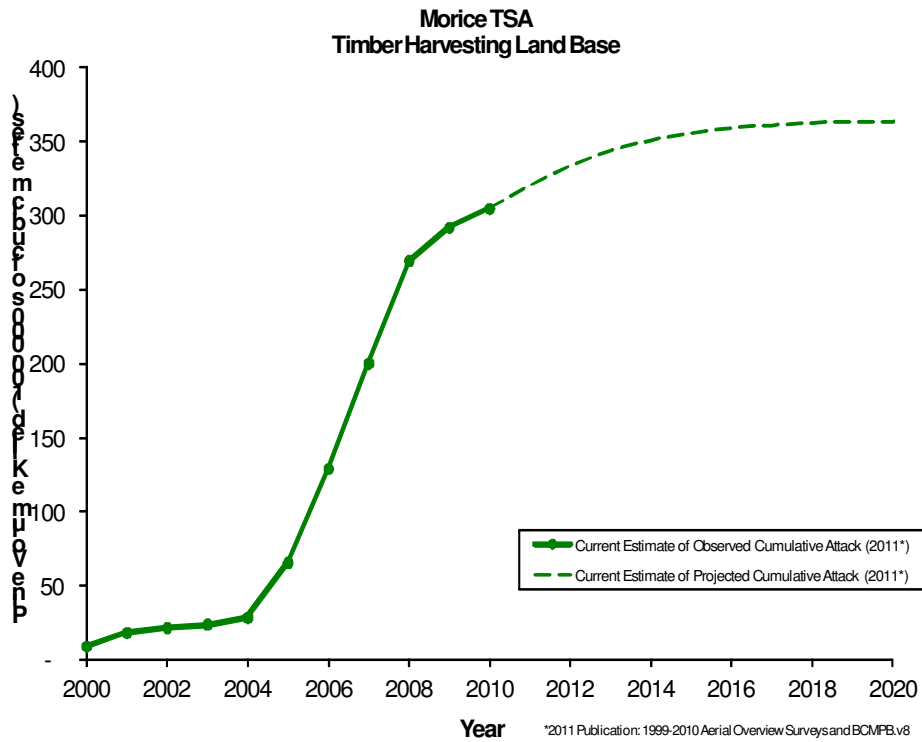


Figure 3: Current Estimate of Observed and Projected Cumulative Attack in the Morice TSA (2011).

## 2.3 Other Major Factors at Play in the DFA

### **Morice Land and Resource Management Plan (LRMP)**<sup>14</sup>

The Government of British Columbia announced the Morice Land and Resource Management Plan (LRMP) on July 18, 2007. The LRMP addresses the long-term balance of environment and economy in the region. It provides 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 Morice TSA. The stability and security provided by the plan provides economic and social stability and increased opportunities for growth and investment throughout the region.

### **Draft Biodiversity Order**<sup>15</sup>

As part of the implementation of the Morice LRMP, a biodiversity order is being proposed to be declared under the Land Use Objectives Regulation. This order will delineate no timber harvesting areas, high biodiversity emphasis areas, old growth management areas, and general forest areas. In addition objectives will apply to seral stage distribution and stand level biodiversity for the above areas.

The Values, Objectives, Indicators and Targets (VOITs) in this SFMP, have been developed to be consistent with the draft order as currently proposed to the extent practicable, however the SFMP may need to be amended once the final order has been put into effect by government.

### **Bull Trout Wildlife Habitat Areas (WHA)**

A Government Action Regulation (GAR) order establishing bull trout WHA's and associated general wildlife measures (GWM) was put into effect on July 30<sup>th</sup>, 2009. Due to the relatively small areas these measures are not expected to impact this SFMP. Bull trout would be considered a species of management concern and appropriate strategies will be documented in site plans if forest activities are planned within the areas.

### **Telkwa Caribou WHA**

A GAR order establishing a WHA and associated GWM's for the Telkwa Caribou herd is being considered by government. The order is proposing to establish, no harvest zones, forest cover requirements, enhanced stand level retention, non-roaded buffers, and treed reserves to limit access to alpine areas in the Telkwa range. Caribou would be considered a species of management concern and appropriate strategies will be documented in site plans if forest activities are planned within the areas.

### **Goat Ungulate Winter Range (UWR).**

A GAR order establishing UWR associated GWM's for Mountain Goats in the Morice TSA was established August 14, 2013. The order provides a 1 km buffer around the habitat areas where primary forest activities are seasonally restricted. These areas would be considered sites of biological significance and appropriate strategies will be documented in site plans if forest activities are planned within the areas.

### **Fisheries Sensitive Watersheds (FSW)**

A GAR order establishing FSW's and associated objectives in the Morice TSA is being considered by government. The objectives relate to the maximum allowable hydrologically disturbed area, managing fine sediment production, maximum allowable stream crossing densities, maintain the recruitment of large woody debris, and maintaining channel widths at stream crossings.

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<sup>14</sup> Reference: <http://www.ilmb.gov.bc.ca/slrp/lrmp/smithers/morice/index.html>.

<sup>15</sup> Reference: ILMB, 2010. Ministerial Order, Land Use Objectives: Morice Land and Resource Management Plan Area (version 6 - Updated April 7, 2010)

The VOITs' in this SFMP, have been developed to be consistent with the draft order as currently proposed to the extent practicable, however, the SFMP may need to be amended once the final order has been put into effect by government

### **Timber Supply**

In addition to the Chief Forester's determination February 1, 2008, the Morice/Lakes IFPA was granted a cut uplift of 200,000 m<sup>3</sup> year on the same date for a period ending August 31st 2011. To be consistent with the Chief Forester's decision no more than 50,000m<sup>3</sup> per year could be harvested from non-pine stands.<sup>16</sup> This IFPA uplift was extended to 2015 and increased to 500,000 m<sup>3</sup>.

The rationale for the cut uplift was based on the following factors

- Reduced Operational Adjustment Factors (OAF1);
- Basing volume projection on site indices from PEM/SIBEC/OGSI rather than forest cover inventory;
- Increasing utilization – lower stump height;
- Using genetically selected stock consistent with BC Forest Genetics Council's species plans.

The MPB mitigation harvest rule and using the Sustainable Forest Management Framework to manage environmental risk from accelerated harvesting was also considered in the decision. For more information please refer to the Morice Lakes IFPA Forestry Plan<sup>17</sup>

## **2.4 Licensee Operating Areas**

The current mountain pine beetle infestation is focusing all forest management planning and harvesting activities on pine leading stands. The size of the epidemic has caused the BC Government to increase the Allowable Annual Cut (AAC) for the Morice TSA from the previous harvest level of 1 961 117 cubic meters to 2,165,000 cubic metres and includes a non-pine partition of 550,000 m<sup>3</sup>. The mountain pine beetle epidemic has had an effect on the ecological, social and economic indicators developed for this SFM Plan. The increase in AAC has resulted in additional Non – Replaceable Forest Licences (NRFL) being awarded to other licensees. Volume from licenses outside the TSA have been transferred into the Morice TSA on a short term basis to 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.

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<sup>16</sup> Reference: Warner, William. Rationale for Determination of Increase in Allowable Annual Cut (AAC) for the Morice and Lakes Innovative Forest Practices Agreement: Uplift for the Morice Timber Supply Area. William J Warner, RPF Regional Manager Northern Interior Forest Region.

<sup>17</sup> Reference: [http://www.moricelakes-ifpa.com/publications/documents/MLIFPA\\_forestryplan\\_20070117.pdf](http://www.moricelakes-ifpa.com/publications/documents/MLIFPA_forestryplan_20070117.pdf)

Canfor does not have the right to direct or control other licensees and their employees and will not be responsible for their activities in the DFA under this SFM plan.

Canfor has good working relationships with other operators in the Morice TSA and communicate 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, 80.5% is directly controlled by Canfor, 13.9% of the volume is considered low risk to the SFMP, and 5.6% is considered moderate risk. Because of this the overall risk of other operators impacting the VOIT's for this plan is considered to be low.

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## 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>18</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>18</sup> In the case of the SFMP for the Morice DFA, this includes compliance with the strategic direction provided in the Morice 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 Morice 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, Canfor compiles 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. Providing updated information and training ensures 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 Morice SFM Planning Process**

The SFMP was developed by Canfor 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 Morice 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, through the IFPA, 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, and West Fraser were certified to the CSA standard for the Morice SFMP. West Fraser and BCTS have since dropped their CSA certification and therefore are not signatories to this plan. On publicly owned land, the responsibility and accountability is ultimately with the Ministry of Forests, Lands and Natural Resource Operations. However, Canfor, the sole 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.
- Providing technical support to the planning process.

Canfor 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 of that other licensees may potentially have on achieving the targets Canfor 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 Canfor 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 the updating of 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 Canfor to assess achievement of indicators and targets. This monitoring process provides Canfor, 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**

Canfor 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 Canfor operations over the long term. At the same time, Canfor will make efforts to manage and balance the landscape for biological diversity, global cycles, soil, water and social responsibility.

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## **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 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 Morice 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.

Canfor 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 Canfor in their annual monitoring activities.

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

The Morice SFMP process has served to further refine the information and concerns of the local public. Incorporating these concerns and ideas into individual 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 Morice SFMP website: <http://www.canfor.com/responsibility/environmental/certification>.

### **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**

### Morice and Lakes IFPA

The Morice Timber Supply Area Rationale for AAC Determination, February 1, 2008<sup>19</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 landbase, timber volumes, and management strategies to indicate future state projected out for a period of 400 years. Prior to the Chief Forester making his determination, the public was invited to review and comment on the Timber Supply Review (TSR). Additional information on the opportunities that were provided for public input can be found in the TSR discussion paper (June 2007)<sup>20</sup>. Further information pertaining to assumptions and analysis can be found within the Chief Foresters Rationale for AAC Determination for the Morice TSA (February 2008).

In support of their request for an AAC uplift the Morice and Lakes IFPA prepared a Forestry Plan and analysis that included a timber supply forecast and a number of sensitivities to test the effect of the innovative forest practices on timber supply and SFMP indicators. The seven elements that were analyzed included:

1. Use Currently Experienced Operational Adjustment Factors (OAF) for the Morice TSA;
2. Use of Better Site Productivity Information;
3. Increased Utilization;
4. Target Species Composition in Managed Stands to Better Support Long Term Harvest Level;
5. Recognize Tested Gains for Future Production of Genetically Selected Stock;
6. Harvest Rules to Prioritize Harvesting of Pine Stands, and;
7. Risk Management of Environmental Values (Accelerated AAC under provisions of SFM Plan)

For details on this analysis please refer to the Morice and Lakes Forestry Plan<sup>21</sup> and Forestry Plan supplement<sup>22</sup>.

### Ecosystem Representation Analysis

Canfor recently completed an Ecosystem Representation Analysis across their operations in BC. 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 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>19</sup> Reference: <http://www.for.gov.bc.ca/hts/tsa/tsa20/>

<sup>20</sup> Reference: <http://www.for.gov.bc.ca/hts/tsa/tsa20/>

<sup>21</sup> Reference: [http://www.moricelakes-ifpa.com/publications/documents/MLIFPA\\_forestryplan\\_20070117.pdf](http://www.moricelakes-ifpa.com/publications/documents/MLIFPA_forestryplan_20070117.pdf)

<sup>22</sup> Reference: [http://www.moricelakes-ifpa.com/publications/documents/Forestry%20Plan%20Supplement\\_final%20draft\\_071101.pdf](http://www.moricelakes-ifpa.com/publications/documents/Forestry%20Plan%20Supplement_final%20draft_071101.pdf)

## **5.6 Legal Requirements**

Awareness of legal requirements is essential when considering suitable Objectives for an Element and determining appropriate Indicators and Targets. Canfor 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 Canfor to remain current with legislation.

## 5.7 Indicators in the SFMP

### 5.7.1 1.1.1 Ecosystem by type

<b>Indicator</b>	<b>1.1.1 Ecosystem area by type</b>
<b>Indicator Statement(s)</b>	1.1.1. Percent representation of ecosystem groups across the DFA.
<b>Element(s)</b>	1.1 Ecosystem Diversity
<b>Value(s) and Objective(s)</b>	<p><u>Value 1.1:</u> The range of functions, interactions and processes that occur naturally within and between ecosystems on the DFA</p> <p><u>Objective 1.1:</u> Functions, interactions and processes that occur naturally within and between ecosystems on the DFA will fluctuate within a (naturally, socially) acceptable range of variation over time</p>
<b>Strategy</b>	
<b>Background &amp; Description</b>	<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</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:</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 Canfor and BCTS operations was conducted in 2011<sup>23</sup>. This analysis determined the abundance and representation of ecosystem groups within four distinct regions and 13 management units. The following steps</p>

<sup>23</sup> Ecosystem Representation Analysis Final Report January 18<sup>th</sup>, 2012 Forest Ecosystem Solutions Ltd.



	<p>were carried out for this analysis:</p> <ul style="list-style-type: none"> <li>Identifying the non-harvesting landbase</li> <li>Classifying the forested landbase into ecosystem groups</li> <li>Evaluating the amount and how the ecosystem groups are distributed in the harvesting and non-harvesting landbase.</li> </ul> <p>The Morice DFA is within the West- Central and North-East Mountains regions and comprises 52 unique forested ecosystem groups. The key to the analysis is that it is much broader than the DFA and truly reflects the rare ecosystems on a larger scale.</p> <p>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 region.</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</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. During field layout if the these site series are encountered they will be reserved from harvest by excluding them from the harvest area or reserving them in WTP's (see indicator 1.1.4a) or other designated reserve areas.</p>																																											
<b>Strategy to Implement</b>	<p>Nine ecosystem groups within the DFA were identified as Rare. All sites within the group are to be protected from harvesting.</p>																																											
<b>Current Status, Predicted Results or Outcome</b>	<p>There was one ecosystem group within the DFA identified as rare/uncommon. All sites within this group are to be protected from harvesting. The following table lists the site series groups/associations considered rare or uncommon (2012 Baseline data):</p> <table border="1" data-bbox="483 1241 1490 1883"> <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 rowspan="2">NE Mtns</td> <td rowspan="2">63</td> <td rowspan="2">hygric ESSFmc</td> <td>ESSF mc-09</td> <td rowspan="2">Hygric-subhygric; very poor-poor</td> <td rowspan="2">Bl - Horsetail - Glow moss</td> </tr> <tr> <td>ESSF mc-09 10</td> </tr> <tr> <td>West-central</td> <td>4</td> <td>xeric SBSdk</td> <td>SBS dk-02</td> <td>Xeric; very poor-poor</td> <td>Pl - Juniper - Ricegrass</td> </tr> <tr> <td>West-central</td> <td>49</td> <td>subhygric-hygric SBSmc2</td> <td>SBS mc2-07</td> <td>Subhygric-hygric; very poor-poor</td> <td>Sxw - Scrub birch - Feathermoss</td> </tr> <tr> <td>West-central</td> <td>58</td> <td>hygric SBSdk</td> <td>SBS dk-09</td> <td>hygric</td> <td>Sb - Snowberry - Sphagnum</td> </tr> <tr> <td>West-central</td> <td>60</td> <td>hygric SBSdk (Act)</td> <td>SBS dk-08</td> <td>hygric</td> <td>Act - Dogwood - Prickly rose</td> </tr> <tr> <td>West-central</td> <td>77</td> <td>mesic ESSFmc</td> <td>ESSF mc-05</td> <td>Mesic; rich-very rich</td> <td>Bl - Huckleberry - Thimbleberry</td> </tr> </tbody> </table>	Final region	Final Ecogroup Number	Final Group Name	Site Series	Moisture-Nutrient regime	Site Association	NE Mtns	63	hygric ESSFmc	ESSF mc-09	Hygric-subhygric; very poor-poor	Bl - Horsetail - Glow moss	ESSF mc-09 10	West-central	4	xeric SBSdk	SBS dk-02	Xeric; very poor-poor	Pl - Juniper - Ricegrass	West-central	49	subhygric-hygric SBSmc2	SBS mc2-07	Subhygric-hygric; very poor-poor	Sxw - Scrub birch - Feathermoss	West-central	58	hygric SBSdk	SBS dk-09	hygric	Sb - Snowberry - Sphagnum	West-central	60	hygric SBSdk (Act)	SBS dk-08	hygric	Act - Dogwood - Prickly rose	West-central	77	mesic ESSFmc	ESSF mc-05	Mesic; rich-very rich	Bl - Huckleberry - Thimbleberry
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	West-central	79	subhygric-hygric medium ESSFmc	ESSF mc-08	Subhygric-hygric; medium-rich	Bl - Valerian - Sickie moss																								
	West-central	81	hygric-subhygric ESSFmk	ESSF mk-06	hygric - subhydric	Bl - Horsetail - Leafy moss																								
	West-central	85	subhygric-hygric ESSFmc	ESSF mc-07	Subhygric-hygric; rich-very rich	Bl - Devil's club - Lady fern																								
	<p>The following table shows how much harvesting has occurred in these ecosystems since the year 2000 (Canfor only data):</p> <table border="1"> <thead> <tr> <th>Site Series</th> <th>Area Harvested (ha)</th> </tr> </thead> <tbody> <tr> <td>ESSF mc-09</td> <td>27.3</td> </tr> <tr> <td>ESSF mc-09 10</td> <td>45.3</td> </tr> <tr> <td>SBS dk-02</td> <td>3.2</td> </tr> <tr> <td>SBS mc2-07</td> <td>144.8</td> </tr> <tr> <td>SBS dk-09</td> <td>4.3</td> </tr> <tr> <td>SBS dk-08</td> <td>0</td> </tr> <tr> <td>ESSF mc-05</td> <td>143.5</td> </tr> <tr> <td>ESSF mc-08</td> <td>0</td> </tr> <tr> <td>ESSF mk-06</td> <td>0</td> </tr> <tr> <td>ESSF mc-07</td> <td>243.8</td> </tr> <tr> <td>ESSF mc-09</td> <td>0</td> </tr> </tbody> </table>						Site Series	Area Harvested (ha)	ESSF mc-09	27.3	ESSF mc-09 10	45.3	SBS dk-02	3.2	SBS mc2-07	144.8	SBS dk-09	4.3	SBS dk-08	0	ESSF mc-05	143.5	ESSF mc-08	0	ESSF mk-06	0	ESSF mc-07	243.8	ESSF mc-09	0
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ESSF mk-06	0																													
ESSF mc-07	243.8																													
ESSF mc-09	0																													
Forecast	<p>Qualitative forecast: By implementing the above strategy, it is forecast that rare and uncommon ecosystems that are <math>\geq 2.0</math> 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> – a target of zero hectares logged in rare and uncommon ecosystems. Past performance has shown it is reasonable to forecast this result into the foreseeable future.</p>																													
Target	Rare ecosystems groups as identified in the previous table will not be harvested, subject to the variance.																													
Basis for the Target	Proactive measure to identify and conserve rare and uncommon ecosystems.																													
Monitoring & Measurement Periodic	Identification of rare and uncommon ecosystems to occur with inventory updates that occur in conjunction with Timber Supply Review (generally every 5 years). In the case of the Morice the Timber Supply is occurring before and update in the inventory. The inventory is scheduled a few years afterward.																													
Annual	Report any incidents of harvesting that occurred in ecosystem groups defined as rare/uncommon. 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.																													

Variance	Harvesting may occur in rare ecosystems for access, forest health, or safety issues as rationalized and documented by a qualified professional.
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**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 broad leaf, treed mixed) >20 years old across the DFA
<b>Element(s)</b>	1.1 Ecosystem Diversity
<b>Value(s) and Objective(s)</b>	<p><u>Value 1.1:</u> Abundance and distribution of common and rare habitats within a range of variability over time to conserve species in the DFA.</p> <p><u>Objective 1.1:</u> A constant supply of habitats and/or attributes sufficient to conserve species that occur naturally on the DFA through time.</p>
<b>Strategy(s)</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 - providing 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. Reporting on this indicator provides high level overview information on area covered by broad forest type, forest succession and management practices that might alter species composition.</p> <p>Ensuring a diversity of tree species is maintained 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>Strategy to Implement</b>	Forest plans will incorporate reforestation strategies that retain the natural balance of broad forest types within the DFA.

<b>Current Status, Predicted Results or Outcome</b>	<p>The table below is updated for new DFA areas as of 2014 for Species Composition by BEC.</p> <table border="1" data-bbox="443 239 1414 459"> <thead> <tr> <th colspan="3">Percent distribution of forest type (coniferous, broadleaf, mixed) &gt;20 years old across the DFA</th> </tr> <tr> <th>Report Year</th> <th>Forest type</th> <th>Canfor</th> </tr> </thead> <tbody> <tr> <td rowspan="3">2014</td> <td>Coniferous</td> <td>93.0%</td> </tr> <tr> <td>Broadleaf</td> <td>2.7%</td> </tr> <tr> <td>Mixed</td> <td>4.2%</td> </tr> </tbody> </table> <p>The new operating area brought into the plan had less deciduous stands but forest types still remain with targets.</p>	Percent distribution of forest type (coniferous, broadleaf, mixed) >20 years old across the DFA			Report Year	Forest type	Canfor	2014	Coniferous	93.0%	Broadleaf	2.7%	Mixed	4.2%
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Report Year	Forest type	Canfor												
2014	Coniferous	93.0%												
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	Mixed	4.2%												
<b>Forecast</b>	<p>Qualitative forecast: by implementing the above strategy, it is forecast that forest composition will be within the target ranges. Current state analysis 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>													
<b>Target</b>	<p>The following table shows the target percentages for Canfor for the distribution of forest types (coniferous, broadleaf, mixed) &gt; 20 years old across the DFA</p> <table border="1" data-bbox="773 989 1097 1161"> <thead> <tr> <th>Forest type</th> <th>Canfor</th> </tr> </thead> <tbody> <tr> <td>Coniferous</td> <td>85-95%</td> </tr> <tr> <td>Broadleaf</td> <td>2.5-7.5%</td> </tr> <tr> <td>Mixed</td> <td>2.5-7.5%</td> </tr> </tbody> </table>	Forest type	Canfor	Coniferous	85-95%	Broadleaf	2.5-7.5%	Mixed	2.5-7.5%					
Forest type	Canfor													
Coniferous	85-95%													
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<b>Basis for the Target</b>	<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>													
<b>Monitoring &amp; Measurement</b> Periodic	<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 periodically – in the year following completion of subsequent TSR’s and determination of the allowable annual cut. Confirm that forest type reporting is within baseline levels.</p>													
<b>Annual</b>														
<b>Variance</b>	<p>None.</p>													

*5.7.3 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. Percent late seral distribution by ecological unit across the DFA. 4.1.1. Maintain the retention of existing (or replacement of) old forest retention area.
<b>Element(s)</b>	1.1 Ecosystem Diversity 4.1 Carbon Uptake and Storage
<b>Value(s) and Objective(s)</b>	<u>Value 1.1:</u> The range of functions, interactions and processes that occur naturally within and between ecosystems on the DFA  <u>Objective 1.1:</u> Functions, interactions and processes that occur naturally within and between ecosystems on the DFA will fluctuate within a (naturally, socially) acceptable range of variation over time.  <u>Value 4.1:</u> Storage of carbon in forest ecosystems and products  <u>Objective 4.1:</u> Forest ecosystems are net carbon sinks over time.
<b>Description</b>	<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 types (NDT), which in turn is used to provide guidance for maintaining biodiversity.</p> <p>Biodiversity can be affected by the disruption of natural processes. Future maintenance of biodiversity 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>Forests have great potential to sequester and store carbon from the atmosphere. Given this, managers should recognize the imperative of keeping forest lands in vigorous tree growth at all times. This often means understanding any age class imbalances and strategies for correction. It also includes ensuring prompt tree regeneration following disturbances such as timber harvests and converting the smallest possible amount of forest land to non-forest land during forest operations (e.g., minimizing roads and landings).</p> <p>Forest carbon has recently become a key SFM value, especially in light of Canada’s international commitment to lower its net carbon outputs to the atmosphere. Models for calculating a forest carbon budget (e.g., the Canadian Forest Service’s Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3)) are becoming available for use by practitioners particularly where they can be linked to forest inventory and timber supply models. Their use in forest planning can indicate whether a specific forest is expected to be a net carbon source or sink over the period normally used for wood-supply forecasts.</p> <p>In their 2009 summary of carbon management in BC’s forests<sup>24</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</p>

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

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.

The level of carbon budget analysis in Canada relies largely on the forest inventory (species and growth rates) and underlying assumptions the forest management regime and what makes up the timber harvesting land base. Because of some of the uncertainty surrounding the data inputs, it can be difficult to tease out changes in carbon sequestration modeling that are strictly as a result of changes to a particular management regime. This creates difficulties for forest managers who are trying to understand the carbon balance implications of various management regimes.

Recent timber supply reviews in the province have included carbon sequestration in the analysis such as that for the Lillooet TSA (May 2009). This trend is expected to continue. In his rationale for the Allowable Annual Cut determination for the Lillooet TSA, the Chief Forester reported “as government and society address the important considerations related to carbon management and climate change mitigation, and reach decisions on how all of the potential uses of forest land should be balanced with carbon management, those decisions will be reflected in future AAC determinations.” Also in his rationale, the Chief Forester recognizes the need for government to take an active role in understanding carbon budgets: “No doubt governments will be called on to analyse and prioritise the many alternative potential uses of the forest, from which to derive and provide a range of socially acceptable management objectives. Analysis of the carbon implications of forest management alternatives will be important information for consideration in the making of such decisions on society’s behalf by our elected representatives.”

In the interim, until government has finalized assumptions for carbon budget modelling, Canfor’s carbon strategy will be:

- Maintain some old growth on the land base for carbon storage
- Prompt reforestation for carbon uptake.
- Minimize permanent access structures to maintain forest productivity for carbon uptake.
- “Canfor” utilizing non-saw fibre that is economically viable (close to the mill) and residual wood waste for pellet production and co-generation energy.
- Canfor has also engaged in sourcing new markets for non-merchantable dry balsam.

Canfor will continue to report on the target for 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 the commitment to positively influence carbon balance within the management units. 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.

Canfor will continue to monitor developments in carbon sequestration modeling both at the provincial and regional level and may 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.

<b>Strategy to Implement</b>	<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 desired 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.</p>																																																																																																																																																																												
<b>Current Status, Predicted Results or Outcome</b>	<p>The amount of late seral (old) age class by ecological unit as compared to the target amount is as indicated in the following table (2014 baseline data):</p> <p>For the purpose of this DFA indicator, late seral is defined as <math>\geq 140</math> yrs for SBS stands and <math>&gt;250</math> years for ESSF stands. The ecological units used for the purpose of reporting at the DFA level are BEC variant and Landscape Unit combinations listed below.</p> <table border="1" data-bbox="423 611 1443 1883"> <thead> <tr> <th>Landscape Unit</th> <th>BEO (Biodiversity Emphasis Option)</th> <th>N D T</th> <th>BEC Variants</th> <th>Seral Stage (Years)</th> <th>Target %</th> <th>Target Drawn Down by 2/3 %</th> <th>Actual May 2014</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Buck</td> <td rowspan="3">Low</td> <td>2</td> <td>ESSFmc</td> <td>&gt;250</td> <td>&gt;9</td> <td>&gt;3</td> <td>3.04</td> </tr> <tr> <td>3</td> <td>SBSdk</td> <td>&gt;140</td> <td>&gt;11</td> <td>&gt;3.7</td> <td>32.91</td> </tr> <tr> <td>3</td> <td>SBSmc2</td> <td>&gt;140</td> <td>&gt;11</td> <td>&gt;3.7</td> <td>38.76</td> </tr> <tr> <td>Bumie</td> <td>High</td> <td>2</td> <td>ESSFmk</td> <td>&gt;250</td> <td>&gt;13</td> <td></td> <td>89.1</td> </tr> <tr> <td rowspan="2">Fulton</td> <td rowspan="2">Low</td> <td>2</td> <td>ESSFmc</td> <td>&gt;250</td> <td>&gt;9</td> <td>&gt;3</td> <td>27.7</td> </tr> <tr> <td>3</td> <td>SBSmc2</td> <td>&gt;140</td> <td>&gt;11</td> <td>&gt;3.7</td> <td>31</td> </tr> <tr> <td rowspan="3">Gosnel</td> <td rowspan="3">Intermediate</td> <td>2</td> <td>ESSFmc</td> <td>&gt;250</td> <td>&gt;9</td> <td></td> <td>38.78</td> </tr> <tr> <td>2</td> <td>ESSFmk</td> <td>&gt;250</td> <td>&gt;9</td> <td></td> <td>53.5</td> </tr> <tr> <td>3</td> <td>SBSmc2</td> <td>&gt;140</td> <td>&gt;11</td> <td></td> <td>47.7</td> </tr> <tr> <td rowspan="2">Granisle</td> <td rowspan="2">Low</td> <td>2</td> <td>ESSFmc</td> <td>&gt;250</td> <td>&gt;9</td> <td>&gt;3</td> <td>0</td> </tr> <tr> <td>3</td> <td>SBSmc2</td> <td>&gt;140</td> <td>&gt;11</td> <td>&gt;3.7</td> <td>27.98</td> </tr> <tr> <td rowspan="3">Houston Tommy</td> <td rowspan="3">High</td> <td>2</td> <td>ESSFmc</td> <td>&gt;250</td> <td>&gt;13</td> <td></td> <td>40.19</td> </tr> <tr> <td>3</td> <td>SBSdk</td> <td>&gt;140</td> <td>&gt;16</td> <td></td> <td>16.58</td> </tr> <tr> <td>3</td> <td>SBSmc2</td> <td>&gt;140</td> <td>&gt;16</td> <td></td> <td>38.65</td> </tr> <tr> <td rowspan="3">Kidprice</td> <td rowspan="3">Intermediate</td> <td>2</td> <td>ESSFmc</td> <td>&gt;250</td> <td>&gt;9</td> <td></td> <td>13.04</td> </tr> <tr> <td>2</td> <td>ESSFmk</td> <td>&gt;250</td> <td>&gt;9</td> <td></td> <td>24.77</td> </tr> <tr> <td>3</td> <td>SBSmc2</td> <td>&gt;140</td> <td>&gt;11</td> <td></td> <td>37.53</td> </tr> <tr> <td rowspan="3">Morice Lake</td> <td rowspan="3">High</td> <td>2</td> <td>ESSFmc</td> <td>&gt;250</td> <td>&gt;13</td> <td></td> <td>23.96</td> </tr> <tr> <td>2</td> <td>ESSFmk</td> <td>&gt;250</td> <td>&gt;13</td> <td></td> <td>83.48</td> </tr> <tr> <td>3</td> <td>SBSmc2</td> <td>&gt;140</td> <td>&gt;16</td> <td></td> <td>68.98</td> </tr> <tr> <td rowspan="2">Morrison</td> <td rowspan="2">Intermediate</td> <td>2</td> <td>ESSFmv 3</td> <td>&gt;250</td> <td>&gt;9</td> <td></td> <td>0.75</td> </tr> <tr> <td>3</td> <td>SBSmc2</td> <td>&gt;140</td> <td>&gt;11</td> <td></td> <td>45.45</td> </tr> <tr> <td rowspan="2">Nadina</td> <td rowspan="2">Intermediate</td> <td>2</td> <td>ESSFmc</td> <td>&gt;250</td> <td>&gt;9</td> <td></td> <td>5.59</td> </tr> <tr> <td>3</td> <td>SBSdk</td> <td>&gt;140</td> <td>&gt;11</td> <td></td> <td>21.16</td> </tr> </tbody> </table>	Landscape Unit	BEO (Biodiversity Emphasis Option)	N D T	BEC Variants	Seral Stage (Years)	Target %	Target Drawn Down by 2/3 %	Actual May 2014	Buck	Low	2	ESSFmc	>250	>9	>3	3.04	3	SBSdk	>140	>11	>3.7	32.91	3	SBSmc2	>140	>11	>3.7	38.76	Bumie	High	2	ESSFmk	>250	>13		89.1	Fulton	Low	2	ESSFmc	>250	>9	>3	27.7	3	SBSmc2	>140	>11	>3.7	31	Gosnel	Intermediate	2	ESSFmc	>250	>9		38.78	2	ESSFmk	>250	>9		53.5	3	SBSmc2	>140	>11		47.7	Granisle	Low	2	ESSFmc	>250	>9	>3	0	3	SBSmc2	>140	>11	>3.7	27.98	Houston Tommy	High	2	ESSFmc	>250	>13		40.19	3	SBSdk	>140	>16		16.58	3	SBSmc2	>140	>16		38.65	Kidprice	Intermediate	2	ESSFmc	>250	>9		13.04	2	ESSFmk	>250	>9		24.77	3	SBSmc2	>140	>11		37.53	Morice Lake	High	2	ESSFmc	>250	>13		23.96	2	ESSFmk	>250	>13		83.48	3	SBSmc2	>140	>16		68.98	Morrison	Intermediate	2	ESSFmv 3	>250	>9		0.75	3	SBSmc2	>140	>11		45.45	Nadina	Intermediate	2	ESSFmc	>250	>9		5.59	3	SBSdk	>140	>11		21.16
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		3	SBSmc2	>140	>11		34.75
Nanika	High	2	ESSFmk	>250	>13		50.02
North Babine	Low	2	ESSFmv <sub>3</sub>	>250	>9	>3	2.28
		3	SBSdk	>140	>11	>3.7	89.43
		3	SBSmc2	>140	>11	>3.7	39.8
Owen	Intermediate	2	ESSFmc	>250	>9		11.46
		3	SBSdk	>140	>11		29.67
		3	SBSmc2	>140	>11		40.23
Parrotts	Low	2	ESSFmc	>250	>9	>3	3.78
		3	SBSdk	>140	>11	>3.7	28.41
		3	SBSmc2	>140	>11	>3.7	25.69
Sibola	High	2	ESSFmk	>250	>13		75.33
		3	SBSmc2	>140	>16		79.01
Tahtsa	Low	2	ESSFmc	>250	>9	>3	4.1
		3	SBSdk	>140	>11	>3.7	16.88
		3	SBSmc2	>140	>11	>3.7	33.98
Thautil	High	2	ESSFmc	>250	>13		20.28
		3	SBSmc2	>140	>16		41.15
Tochcha Natowite	Intermediate	2	ESSFmv <sub>3</sub>	>250	>9		1.9
		3	SBSmc2	>140	>11		36.4
		3	SBSwk3	>140	>11		51.55
Topley	Low	2	ESSFmc	>250	>9	>3	3.01
		3	SBSmc2	>140	>11	>3.7	19.37
Triotsa	High	2	ESSFmc	>250	>13		36.04
		2	ESSFmk	>250	>13		54.02
		3	SBSmc2	>140	>16		88.3
Valley	Intermediate	2	ESSFmc	>250	>9		22.93
		3	SBSdk	>140	>11		10.74
		3	SBSmc2	>140	>11		29.51
Whitesail	Intermediate	2	ESSFmc	>250	>9		23.58
		3	SBSdk	>140	>11		65.86
		3	SBSmc2	>140	>11		49.63

<b>Forecast</b>	<p><b>Quantitative forecast:</b></p> <p>It is assumed that this forecast (Morice TSA level) is applicable to the DFA as Canfor is such a large presence in the TSA. Appendix 5 has tables forecasting seral stage out 5 years based on planned blocks and aging stands forward. All the SBSdk sites show increasing levels of old seral and that trend is expected to continue as many age class 7 stands are close to age class 8. The ESSF is a more difficult issue with the natural absence of age class 9 stands. In spite of very little harvesting due to pine salvage at lower elevations and no harvesting of these age class 9 stands a number of the units are below thresholds. Re inventory in a few years is not likely going to help as natural factors cycle stands down to a younger age class. Recognizing that age is only a surrogate for old seral an amendment will be required in the future to include age class 8 stands in ESSF old seral.</p>
<b>Target</b>	Percent late seral (old) distribution by ecological unit as shown in the table above.
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 Morice LRMP,</li> <li>• The Morice Draft Biodiversity Order,</li> <li>• The Provincial Non-spatial Old Growth Order,</li> <li>• Canfor Biodiversity Strategy.</li> </ul>
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	The report will continue to provide the current status percentage of Early, Immature, Mature + Old, as well as Old seral and report as per the table above however, Early, Immature, and Mature + Old will not have a target and will be provided for information purposes only. This will be reported annually.
Variance	Percentages by ecological unit (LRMP area specific management) as shown in the table above.

*5.7.4 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>	<p>1.1.4(a). Percent of stand structure retained across the DFA in harvested areas</p> <p>1.1.4(b). Percent of blocks meeting dispersed retention levels as prescribed in the site plan/logging plan</p> <p>1.1.4(c). Number of non-conformance where forest operations are not consistent with riparian management requirements as identified in operational plans</p>
<b>Element(s)</b>	<p>1.1 Ecosystem Diversity</p> <p>1.3 Genetic Diversity</p>
<b>Value(s) and Objective(s)</b>	<p><u>Value 1.1:</u> The range of functions, interactions and processes that occur naturally within and between ecosystems on the DFA</p> <p><u>Objective 1.1:</u> Functions, interactions and processes that occur naturally within and between ecosystems on the DFA will fluctuate within a (naturally, socially) acceptable range of variation over time.</p> <p><u>Value 1.3:</u> The opportunity for individuals within sub-species and species to move and interact within their natural range in and across the DFA.</p> <p><u>Objective 1.3:</u> Habitats for species present on the DFA that are functionally connected over a range of spatial and temporal scales.</p>
<b>Description</b>	<p>Complexity of stand structure is a key component of an operational strategy to sustain biodiversity in forested ecosystems (Bunnell et al 1999). Structural complexity helps to mitigate the potential deleterious effects of large scale stand and landscape simplification associated with intensive short-rotation forest management. It can be provided by the adoption of retention silvicultural systems, a practice broadly applied in interior BC (Lindenmayer and Franklin 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. 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>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>Riparian management areas, provide opportunities for connectivity of forested cover along</p>

	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.						
<b>Strategy to Implement</b>	Canfor will achieve the targets through allocation of retention patches and dispersed retention (individual trees and stubs) during cutblock development. Where applicable, plans will also contain riparian area commitments. Company plans and practices support riparian management, group retention and protection of designated wildlife trees/stubs. Operational plans include a commitments that, at the landscape level, will achieve a target level of 7% retention.						
<b>Current Status</b> Predicted Results or Outcome	<p>1.1.4(a). The following table displays the baseline landscape level retention levels by licensee.</p> <table border="1"> <thead> <tr> <th>Licensee</th> <th>2014 Status</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td>Canfor</td> <td>16.4%</td> <td>7%</td> </tr> </tbody> </table> <p>1.1.4(b). 100 percent of blocks for Canfor meet dispersed retention levels as prescribed in the site plan/logging plan areas (2014 baseline data). 1.1.4(c). There were no non-conformances where forest operations are not consistent with riparian management requirements as identified in operational plans. (2014 baseline data).</p>	Licensee	2014 Status	Target	Canfor	16.4%	7%
Licensee	2014 Status	Target					
Canfor	16.4%	7%					
<b>Forecast</b>	<b>Qualitative forecast: 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 2 of the Annual Report shows 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.</b>						
<b>Target</b>	1.1.4(a) Landscape level of target 7%. 1.1.4(b) 100% 1.1.4(c) 0						
Basis for the Target	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.						
<b>Monitoring &amp; Measurement</b> Periodic							
Annual	1.1.4(a). For areas harvested during the annual reporting period, report the (weighted average) percent of area retained. 1.1.4(b). For areas harvested during the annual reporting period report the percent of blocks meeting dispersed retention levels as prescribed in the site plan/logging plan. 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 cutblocks that were harvested that had riparian management areas within or adjacent to them.						
Variance	None.						

**5.7.5 1.1.5 Degree of habitat connectivity**

<b>Indicator</b>	<b>1.1.5 Degree of habitat connectivity (Local Indicator)</b>
<b>Indicator Statement(s)</b>	1.1.5. Percent forest in each patch type by patch size class by BEC variant by licensee.
<b>Element(s)</b>	1.1 Ecosystem Diversity 1.2 Species Diversity 2.1 Forest Ecosystem Resilience 2.2 Forest Ecosystem Productivity
<b>Value(s) and Objective(s)</b>	<p><u>Value 1.1:</u> The range of functions, interactions and processes that occur naturally within and between ecosystems on the DFA</p> <p><u>Objective 1.1:</u> Functions, interactions and processes that occur naturally within and between ecosystems on the DFA will fluctuate within a (naturally, socially) acceptable range of variation over time.</p> <p><u>Value 1.2:</u> Abundance and distribution of common and rare habitats within a range of variability over time to conserve species on the DFA.</p> <p><u>Objective 1.2:</u> A constant supply of habitats and/or attributes sufficient to conserve species that occur naturally on the DFA through time.</p> <p><u>Value 2.1:</u> Healthy, productive forests that support ecosystem conditions and process.</p> <p><u>Objective 2.1:</u> Forest ecosystem resilient to disturbances and stresses.</p> <p><u>Value 2.2:</u> Ecosystem and biological productivity is conserved on the DFA.</p> <p><u>Objective 2.2:</u> Sustainable rates of ecosystem and biological productivity</p>
<b>Strategy(s) Description</b>	<p>The distribution of patches across the BEC variant can be used as an indicator of ecosystem health at the BEC variant level. Natural disturbance regimes create different size patches based on variables such as disturbance agents (e.g. wind, fire, insects, disease), frequency, intensity and size of disturbance. Patches can range in size from very small (stand gaps caused by windfall or root rot) to very large (tens of thousands of hectares caused by fire or insect epidemic). The Biodiversity Guidebook and other analyses have suggested patch size distributions that follow natural disturbance patterns based on Natural Disturbance Types (NDTs). The Morice LRMP has proposed objectives, measures and targets for patch sizes for the plan area by BEC variant, based on an analysis of historic disturbance regime and fire return intervals.</p> <p>By maintaining patch sizes, 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 indices will provide important information on BEC variant level ecosystem health.</p> <p>This indicator will track the percentage of the forest land base in each patch type by patch size class by Biological Ecosystem Classification (BEC) variant by licensee. When used in the design of landscape patterns, a patch is dynamic and consists of an individual stand, or a group of stands that are in close proximity (i.e. no intervening edge) and are similar in structural/seral stage and elevation. It can be either a natural disturbance opening that led to forests of similar age or an opening created by cut blocks. Forest patches will be grouped into patch size classes, which are differentiated by seral stage and area class. Thresholds for each patch size class vary according to BEC variant and are defined in the Morice LRMP. The desired representation of each patch size class on the landscape is defined by BEC variant</p>

	<p>units, which are delineated on the basis of topographic, climatic, and ecosystem features.</p> <p>Age criteria for patch types are as follows:</p> <ul style="list-style-type: none"> <li>• Early &lt;=20 year old forest.</li> </ul> <p>Patch size classes are as follows:</p> <ul style="list-style-type: none"> <li>• Small &gt;1 and &lt;=40</li> <li>• Medium &gt;40 and &lt;=250.</li> <li>• Large &gt;250</li> </ul>																																																							
<b>Strategy Implementation</b>	<p><b>More small and large patches will be created where pine salvage program permits.</b></p> <p>Canfor will achieve targets by continuing to gradually plan harvesting so that the patch size distribution for the BEC variant will be moving toward the targets. Company plans and practices support early seral patch development. Operational plans include a commitments that, at the landscape level, will work toward achieving targets for early seral patches. Plans are properly executed providing desired results. Post harvest evaluations assess plan conformance.</p>																																																							
<b>Current Status</b>	<p>The following table displays the baseline percent forest in each patch type by patch size class by BEC Variant (2014 Baseline data).</p> <p>Morice Patch Status July 2014</p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">BEC</th> </tr> <tr> <th>ESSF</th> <th>SBSdk</th> <th>SBSmc&amp;wk3</th> </tr> </thead> <tbody> <tr> <td>Current small</td> <td>6.5%</td> <td>5.3%</td> <td>6.4%</td> </tr> <tr> <td>Target</td> <td>15-25%</td> <td>20-30%</td> <td>20-30%</td> </tr> <tr> <td>Forecast small</td> <td>5.3%</td> <td>7.1%</td> <td>5.7%</td> </tr> <tr> <td>Trend</td> <td>Away</td> <td>Toward</td> <td>Away</td> </tr> <tr> <td>Current Med</td> <td>22.8%</td> <td>11.2%</td> <td>20.3%</td> </tr> <tr> <td>Target</td> <td>15-35%</td> <td>10-30%</td> <td>10-30%</td> </tr> <tr> <td>Forecast Med</td> <td>19.2%</td> <td>14.1%</td> <td>18.5%</td> </tr> <tr> <td>Trend</td> <td>In target</td> <td>In target</td> <td>In target</td> </tr> <tr> <td>Current Large</td> <td>37.0%</td> <td>48.8%</td> <td>46.4%</td> </tr> <tr> <td>Target</td> <td>50-60%</td> <td>50-60%</td> <td>50-60%</td> </tr> <tr> <td>Forecast Large</td> <td>41.2%</td> <td>41.8%</td> <td>45.7%</td> </tr> <tr> <td>Trend</td> <td>Toward</td> <td>Away</td> <td>Away</td> </tr> </tbody> </table>		BEC			ESSF	SBSdk	SBSmc&wk3	Current small	6.5%	5.3%	6.4%	Target	15-25%	20-30%	20-30%	Forecast small	5.3%	7.1%	5.7%	Trend	Away	Toward	Away	Current Med	22.8%	11.2%	20.3%	Target	15-35%	10-30%	10-30%	Forecast Med	19.2%	14.1%	18.5%	Trend	In target	In target	In target	Current Large	37.0%	48.8%	46.4%	Target	50-60%	50-60%	50-60%	Forecast Large	41.2%	41.8%	45.7%	Trend	Toward	Away	Away
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<b>Forecast</b>	<p><b>By implementing the strategy all units will start to trend toward or be in target. This is long term process. For example, due to old seral limitations there are limited options for harvesting will limit the ability to design large patches.</b></p>																																																							
<b>Target</b>	<p>Trending toward early seral patch targets as shown in the table above.</p>																																																							
<b>Basis for the Target</b>	<p>The Biodiversity Guidebook, and Morice LRMP for the natural disturbance types that occur on the DFA.</p>																																																							

<b>Monitoring &amp; Measurement</b> Periodic	Utilize targeted percent early seral patch baseline information. Identification of actual patch by BEC variant to occur with inventory updates in conjunction with Timber Supply Review (generally every 5 years). Report as per the table above.
Annual	
Variance	None.

*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; 1.4.1. Proportion of identified sites with implemented management strategies.*

<b>Indicator(s)</b>	<p><b>1.2.1 Degree of habitat protection for selected focal species, including species at risk</b></p> <p><b>1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk</b></p> <p><b>1.4.1 Proportion of identified Sites with Implemented Management Strategies</b></p>
<b>Indicator Statement(s)</b>	<p>1.2.1. Percent of forest management activities consistent with management strategies for Species of Management Concern.</p> <p>1.4.1. Percent of forest management activities consistent with management strategies for protected areas and sites of biological significance</p>
<b>Element(s)</b>	<p>1.2 Species Diversity</p> <p>1.3 Genetic Diversity</p> <p>1.4: Protected Areas and Sites of Biological and Cultural Significance.</p>
<b>Value(s) and Objective(s)</b>	<p><u>Value 1.2:</u> Abundance and distribution of common and rare habitats within a range of variability over time to conserve species on the DFA.</p> <p><u>Objective 1.2:</u> A constant supply of habitats and/or attributes sufficient to conserve species that occur naturally on the DFA through time.</p> <p><u>Value 1.3:</u> The opportunity for individuals within sub-species and species to move and interact within their natural range in and across the DFA.</p> <p><u>Objective 1.3:</u> Habitats for species present on the DFA that are functionally connected over a range of spatial and temporal scales.</p> <p><u>Value 1.4:</u> Protected areas and sites of biological and cultural significance are identified and appropriately managed.</p> <p><u>Objective 1.4:</u> Protected areas identified through government processes are respected and accommodated. Biologically and culturally significant areas are identified and management strategies appropriate to their long term maintenance are implemented.</p>
<b>Strategy(s)</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.</p> <p>Canfor 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> <p>Canfor 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</p>



	<p>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. Incursions into draft OGMAs are generally tolerated when Canfor replaces that area with other areas of suitable attributes.</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 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.</p> <p>Canfor includes commitments in site/logging plans or other operational plans to ensure activities do not compromise these protected areas.</p>				
Means of Achieving Objective & Target	<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, 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. Canfor manages 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>Canfor manages spatial information that identifies the location of these larger scale and stand level protected areas. Where applicable, this information is brought forward into operational plans to ensure roads harvest activities do not compromise protected areas. Management strategies might include plans for road deactivation or rehabilitation, additional dispersed retention or a unique silviculture regime. Operational plans are then 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>				
Current Status Predicted Results or Outcome	<p>The following table displays the % conformance with management strategies (2012 Baseline data).</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Licensee</th> <th>2010 Status</th> </tr> </thead> <tbody> <tr> <td>Canfor</td> <td>100%</td> </tr> </tbody> </table> <p>See Appendix 3 for the complete list of Species of Management Concern within the DFA.</p>	Licensee	2010 Status	Canfor	100%
Licensee	2010 Status				
Canfor	100%				
Forecast	Short and long term supply of desirable habitat for all Species of Management Concern (see Appendix 3) resulting in stable populations.				
Target	<p>1.2.1. 100% conformance with management strategies</p> <p>1.4.1. 100% conformance with management strategies</p>				
Basis for the Target	Legal obligations, use of best available information, and habitat supply modeling done at the provincial/regional level for specific focal species.				
Monitoring & Measurement					

Periodic	
Annual	For areas where forest activities occurred during the annual reporting period that contained operation 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 areas having operational plan commitments.
Variance	1.2.1. None. 1.4.1. None.

*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. 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>	<u>Value 1.2:</u> Abundance and distribution of common and rare habitats within a range of variability over time to conserve species on the DFA. <u>Objective 1.2:</u> A constant supply of habitats and/or attributes sufficient to conserve species that occur naturally on the DFA through time. <u>Value 1.3:</u> The opportunity for individuals within sub-species and species to move and interact within their natural range in and across the DFA. <u>Objective 1.3:</u> Habitats for species present on the DFA that are functionally connected over a range of spatial and temporal scales.
<b>Strategy(s)</b> Description	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.  Seed used in Crown land reforestation that is consistent with provincial regulations and standards ensure regenerated stands are genetically diverse, adapted, healthy and productive, now and in the future. Suitable seed and vegetative lots must also be of a high quality and available in sufficient quantities to meet the specific stocking and forest health needs of a given planting site.  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 what seedlot is ecologically suited for a given area. By choosing a seedlot that was suitable to the site it was to be planted in, the resulting plantation would be adapted to its site, local climate, and endemic forest health problems.
Means of Achieving Objective & Target	Canfor'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</b> Predicted Results or Outcome	100% of regeneration was consistent with provincial regulations and standards for seed and vegetative material use.
<b>Forecast</b>	Healthy, productive and genetically diverse forests that are ecologically suited to the site.
<b>Target</b>	100% conformance with Chief Forester's Standards for seed use.
Basis for the Target	Legal obligations and use of best available information..

<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Participating licensees 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.
Variance	None.

[Element 1.4 Protected Areas and Sites of Biological and Cultural Significance.]

Core Indicator 1.4.1. Percent of forest management activities consistent with management strategies for protected areas and sites of biological significance is covered under Indicator 1.2.1 (above).

*5.7.8 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. Percent of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes 6.2.1. Percent 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> Information on Aboriginal Forest Values, knowledge and uses. <u>Objective 6.2.1:</u> To obtain information from First Nations for use in planning processes.
<b>Strategy(s)</b> Description	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 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.
<b>Means of Achieving Objective &amp; Target</b>	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 that includes a sharing of information and enables Canfor to understand and incorporate traditional knowledge into forest management options. Canfor is aware of culturally important, sacred and spiritual sites leading to appropriate management or protection by specifying measures in operational plans. Plans are properly executed providing 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 cutblocks and roads have a Cultural Heritage Resource (CHR) assessment completed and strategies implemented to protect resource features.

<p><b>Current Status</b></p> <p>Predicted Results or Outcome</p>	<p>The following table displays the % conformance with management strategies.</p> <table border="1" data-bbox="545 241 964 394"> <thead> <tr> <th data-bbox="545 241 688 331">2010 Status</th> <th data-bbox="688 241 818 331">2011 Status</th> <th data-bbox="818 241 964 331">Target</th> </tr> </thead> <tbody> <tr> <td data-bbox="545 331 688 394">100%</td> <td data-bbox="688 331 818 394">100%</td> <td data-bbox="818 331 964 394">100%</td> </tr> </tbody> </table>	2010 Status	2011 Status	Target	100%	100%	100%
2010 Status	2011 Status	Target					
100%	100%	100%					
<p>Forecast</p>	<p>Open and meaningful relationships with local Aboriginals leading to a trust in sharing sensitive information. Forest plans contain information on how these sites will be managed or protected.</p>						
<p><b>Target</b></p>	<p>100% of blocks and roads have consultation records and 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>100% of cutblocks and roads have a Cultural Heritage Resource (CHR) assessment completed and strategies implemented to protect the resource features.</p>						
<p>Basis for the Target</p>	<p>Legal obligations, alignment with Canfor Sustainable Forest management Commitments.</p>						
<p><b>Monitoring &amp; Measurement</b></p> <p>Periodic</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.</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 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.</p> <p>Retain a record of the number of blocks and roads having a CHR assessment completed.</p>						
<p>Variance</p>	<p>0%</p>						

**5.7.9 2.1.1. Reforestation Success**

<b>Indicator</b>	<b>2.1.1 Reforestation success</b>
<b>Indicator Statement(s)</b>	2.1.1. Average Regeneration delay 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> Healthy, productive forests that support ecosystem conditions and process. <u>Objective 2.1:</u> Forest ecosystem resilient to disturbances and stresses. <u>Value 4.1:</u> Storage of carbon in forest ecosystems and products. <u>Objective 4.1:</u> Forest ecosystems are net carbon sinks over time on the DFA.
<b>Strategy(s) Description</b>	<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 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.</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 cutblocks can contribute to reducing climate change. The sooner cutblocks are regenerated after completion of harvest the sooner this process can begin.</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>• 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>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>



<p>Means of Achieving Objective &amp; Target</p>	<p>Licensees are legally required to declare the Net Area to be Reforested (NAR) of a cutblock regenerated by a date specified in the Site Plan. The NAR is the area of a cutblock 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>																								
<p><b>Current Status</b> Predicted Results or Outcome</p>	<p>The following table summarizes Canfor’s performance to date specific to regeneration delay. The data represents the yearly area weighted average regeneration delay performance (2010 Baseline data).</p> <table border="1" data-bbox="532 590 1325 804"> <thead> <tr> <th colspan="7">Planting Year Average Weighted Regeneration Delay</th> <th>Average Regen Delay</th> </tr> <tr> <th>2006</th> <th>2007</th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th></th> </tr> </thead> <tbody> <tr> <td>1.71</td> <td>1.94</td> <td>2.00</td> <td>2.93</td> <td>2.43</td> <td></td> <td></td> <td>2.20</td> </tr> </tbody> </table>	Planting Year Average Weighted Regeneration Delay							Average Regen Delay	2006	2007	2008	2009	2010	2011	2012		1.71	1.94	2.00	2.93	2.43			2.20
Planting Year Average Weighted Regeneration Delay							Average Regen Delay																		
2006	2007	2008	2009	2010	2011	2012																			
1.71	1.94	2.00	2.93	2.43			2.20																		
<p>Forecast</p>	<p>Prompt reforestation ensures that the productive capacity of forest landbase to grow trees is maintained. Promptness also aids in providing young trees a head start against competing vegetation, helping to reduce the need for manual or chemical brushing treatments. Actively growing, healthy forests will best contribute to carbon uptake and storage.</p> <p>Healthy ecosystems with a diversity of native broadleaf and coniferous species maintained at endemic and sustainable levels. Forests that uptake carbon and positively contribute to a reduction in carbon emissions.</p>																								
<p><b>Target</b></p>	<p>Regeneration delay achieved in: CFP: ≤ 2.5 years 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>CFP: + 0.5 years</p>																								

*5.7.10 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. Percent of gross forested landbase in the DFA converted to non-forest land use through forest management activities
<b>Element(s)</b>	2.2 Forest Ecosystem Productivity 4.2 Forest Land Conversion
<b>Value(s) and Objective(s)</b>	<p><u>Value 2.2:</u> Productive area and productivity within the DFA</p> <p><u>Objective 2.2:</u> Minimize reductions to the productive area and productivity within the DFA</p> <p><u>Value 4.2:</u> Gross Forest Area within the DFA.</p> <p><u>Objective 4.2:</u> Minimize reductions to the gross forest area on the DFA over time.</p>
<b>Strategy(s)</b> Description	<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 forest area 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 timber harvesting landbase is fully roaded. As such a periodic review of the associated targets will be necessary over time.</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>• 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>Canfor will continue to report on the target within this indicator (Percent of gross forested landbase 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 latest, Canfor will rely upon forest carbon analysis conducted in conjunction with the next Timber Supply Review. .</p>

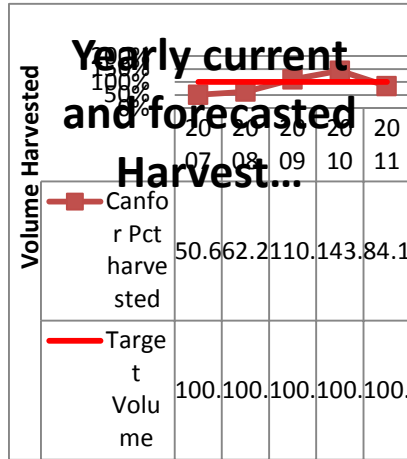
<p>Means of Achieving Objective &amp; Target</p>	<p>Reductions to the gross forest area due to permanent access structures resulting from forest management activities can be minimized by</p> <ul style="list-style-type: none"> <li>• Careful total chance access planning to minimize the amount of permanent access structures</li> <li>• Use of 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.</li> <li>• Conducting harvesting inspections to assess consistency with specifications outlined in preworks and operational plans.</li> </ul> <p>Proposed reductions to the gross forest landbase 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</b> Predicted Results or Outcome</p>	<p>Using baseline data from the 2006 to 2009 reporting periods the percentage of the gross forested area converted to permanent access by licensee includes a maximum of 1.56% for Canfor in 2006. The variability in individual licensee performance from year to year is a function of changes to the licensee gross forest area and continual improvement of the consolidated roads data set used to report out on this indicator.</p> <table border="1" data-bbox="500 999 1352 1131"> <thead> <tr> <th>Licensee</th> <th>2006 Status</th> <th>2007 Status</th> <th>2008 Status</th> <th>2009 Status</th> <th>2010 Status</th> <th>2011 Status</th> <th>2012 Status</th> </tr> </thead> <tbody> <tr> <td>Canfor</td> <td>1.56%</td> <td>1.30%</td> <td>1.30%</td> <td>1.30%</td> <td>1.26%</td> <td>1.26%</td> <td></td> </tr> </tbody> </table> <p>For the purposes of this indicator the 2009 results in the table above will be used as the baseline for the percentage of the gross forested area converted to permanent access by licensee. The 2010 status will be used until 2014 when next set of analysis is completed.</p>	Licensee	2006 Status	2007 Status	2008 Status	2009 Status	2010 Status	2011 Status	2012 Status	Canfor	1.56%	1.30%	1.30%	1.30%	1.26%	1.26%	
Licensee	2006 Status	2007 Status	2008 Status	2009 Status	2010 Status	2011 Status	2012 Status										
Canfor	1.56%	1.30%	1.30%	1.30%	1.26%	1.26%											
<p>Forecast</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 Provincial Timber Supply Review.</p>																
<p><b>Target</b></p>	<p>The target will be as follows: 2.2%</p>																
<p>Basis for the Target</p>	<p>Focused on removal of productive forest land base where forest managers have direct management responsibility. Provides an overall DFA performance measure by licensee, evaluating landbase 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 targets 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</p>																

	is expected that the percentage of the gross forest landbase that is converted to permanent access structures will decrease over time as the DFA becomes fully roaded. As such periodic evaluation of the targets over time will be necessary to ensure that targets are still meaningful.
<b>Monitoring &amp; Measurement</b>	Permanent access structures percent are utilized in Provincial Timber Supply Review forecasts.
Periodic	Report percent converted once every 5 years from operational information supplied into Genus 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.
Annual	None
Variance	None

*5.7.11 2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested; 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA*

<b>Indicator</b>	<p><b>2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested</b></p> <p><b>5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA</b></p>
<b>Indicator Statement(s)</b>	<p>2.2.2. Percent of volume harvested compared to the allocated harvest level</p> <p>5.1.1(a). Percent of volume harvested compared to the allocated harvest level</p>
<b>Element(s)</b>	<p>2.2 Forest Ecosystem Productivity</p>
<b>Value(s) and Objective(s)</b>	<p><u>Value 2.2:</u> Ecosystem and biological productivity is conserved on the DFA.</p> <p><u>Objective 2.2:</u> Sustainable rates of ecosystem and biological productivity</p> <p><u>Value: 5.1:</u> A balanced supply and variety of timber and non-timber products, services and benefits on the DFA</p> <p><u>Objective: 5.1:</u> A sustainable harvest and use of timber products, services and benefits across the DFA</p>
<b>Strategy(s)</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 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>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 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</p>

	<p>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>Canfor 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 replaceable Forest License A18628 has an AAC 940,424 m3 and the five year cut control is from 2012 to 2017. The new replaceable license A91846 has an AAC of 324,500 and a five cut control from 2011 to 2016 This volume is harvested on Canfor’s DFA.</p>
<p><b>Current Status</b>  Predicted Results or Outcome</p>	<p>Long term harvest level (2008 baseline data):</p> <ul style="list-style-type: none"> <li>• the AAC of 2,165,000 m3 for the Morice TSA can be maintained for the duration of the current AAC determination</li> <li>• the approximate long term harvest level indicated in the 2008 timber supply review was 1,600,000 cubic meters; however the emphasis of the 2008 TSR (TSR 3) was placed on the midterm impact of the mountain pine beetle epidemic</li> </ul> <p><i>BC data from most current AAC rationale <a href="http://www.for.gov.bc.ca/hts/tsas.htm">http://www.for.gov.bc.ca/hts/tsas.htm</a></i></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 Morice TSA was determined on February 1<sup>st</sup>, 2008. The review indicated the new AAC for the Morice TSA is 2,165,000 cubic metres.</p> <p>The new allowable cut includes a partition attributable to harvesting non-pine timber. This partition provides an annual harvest limit of 550,000 cubic metres for tree species other than pine.</p> <p>The 2008 AAC will remain in effect until a new AAC is determined, which must take place within five 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/tsa20/">http://www.for.gov.bc.ca/hts/tsa/tsa20/</a></p> <p>The following graph shows the percentage volume 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 the volume that was harvested has generally been within 50% of the AAC apportionment.</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.

The following table shows the percentage species composition (pine, balsam, spruce) of harvested volumes.

Species	2005 Status	2006 Status	2007 Status	2008 Status	2009 Status	2010 Status	2011 Status
Pine	70.1	74.9	68.3	67.0	74	76	<b>58.8</b>
Balsam	7.5	7.3	12.7	19.0	16	8	<b>16.9</b>
Spruce	22.4	17.9	19.0	14.0	10	16	<b>24.3</b>

Forecast

<b>Target</b>	100% over the cut control period as defined by Timber supply forecast harvest flow
Basis for the Target	Legal requirements.
<b>Monitoring &amp; Measurement</b> Periodic	The schedule for subsequent Timber Supply Reviews for the Morice 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	For monitoring purposes only, report (m3) the species composition (pine, balsam, spruce) of harvested volumes.
5 year	Report the harvest level allocated for each license for the cut control period and the harvest level cut at the end of the period.
Variance	According to the Cut Control Regulation and Policy 10%



*5.7.12 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> Productive capacity of soil resources are conserved <u>Objective 3.1:</u> Soil quantity and quality are sustained through their characteristic range of variation on the DFA over time
<b>Strategy(s)</b> Description	<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 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>
Means of Achieving Objective & Target	<p>Prior to harvest commencement field data is collected to assess slopes, soil textures, soil moisture regimes, 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 year that ensures commitments can be achieved. Post harvest evaluations and other inspections assess -compliance with soil disturbance limits identified in plans.</p>

<b>Current Status</b> Predicted Results or Outcome	The following table shows the current status from 2006 to 2010 for soil disturbance objectives. The target was met every period except 2006 for Canfor.									
		<b>Percentage of Blocks meeting Net Area Reforested (NAR) soil disturbance objectives</b>								
	<b>Licensee</b>	<b>2006 Status</b>	<b>2007 Status</b>	<b>2008 Status</b>	<b>2009 Status</b>	<b>2010 Status</b>	<b>2011 Status</b>	<b>Target</b>	<b>Variance</b>	<b>Achieve Target</b>
	Canfor	99.6%	100%	100%	100%	100%		100%	0%	Annually
<b>Forecast</b>	Productive forest soils with minimized losses from forest operations will be maintained.									
<b>Target</b>	100% of blocks meet soil disturbance objectives.									
<b>Basis for the Target</b>	Maintenance of site productivity is a core prerequisite for achieving sustainability. Managing the area of detrimental soil disturbance will help retain the productive capacity of the land base.									
<b>Monitoring &amp; Measurement</b> Periodic	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.									
Annual	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 cutblocks where soil disturbance commitments were achieved as compared to the total area of cutblocks 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.									
<b>Variance</b>	None									

*5.7.13 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 cutblocks reviewed 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> Productive capacity of soil resources are conserved <u>Objective 3.1:</u> Soil quantity and quality are sustained through their characteristic range of variation on the DFA through time.
<b>Strategy(s)</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 or age class.</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>• Uneconomic 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</li> <li>• Retain and leave standing trees below utilization standards (poles and bigger) as a long-term CWD recruitment source</li> </ul>
Means of Achieving Objective & Target	<p>Canfor will achieve objectives and targets specific to CWD through the possible 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>• 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</li> <li>• Conducting effectiveness monitoring to assess if controls are effective at achieving the desired results</li> </ul>

	CWD is managed on a rotation bases and as such strategies must address recruitment of CWD over the short and long term.																																	
<b>Current Status</b> Predicted Results or Outcome	Using baseline data starting in 2006 it was determined that the percentage of blocks where post harvest CWD levels are within targets contained in plans was 100%.. <table border="1" data-bbox="464 348 1393 600"> <thead> <tr> <th colspan="11">Percentage of cutblocks reviewed where post harvest CWD levels are within the targets contained in plans</th> </tr> <tr> <th>Licensee</th> <th>2006 Status</th> <th>2007 Status</th> <th>2008 Status</th> <th>2009 Status</th> <th>2010 Status</th> <th>2011 Status</th> <th>Average</th> <th>Target</th> <th>Variance</th> <th>Achieve Target</th> </tr> </thead> <tbody> <tr> <td>Canfor</td> <td>100.0%</td> <td>100.0%</td> <td>100.0%</td> <td>100.0%</td> <td>100%</td> <td>100%</td> <td>100.0%</td> <td>100.0%</td> <td>0%</td> <td>Annually</td> </tr> </tbody> </table>	Percentage of cutblocks reviewed where post harvest CWD levels are within the targets contained in plans											Licensee	2006 Status	2007 Status	2008 Status	2009 Status	2010 Status	2011 Status	Average	Target	Variance	Achieve Target	Canfor	100.0%	100.0%	100.0%	100.0%	100%	100%	100.0%	100.0%	0%	Annually
Percentage of cutblocks reviewed where post harvest CWD levels are within the targets contained in plans																																		
Licensee	2006 Status	2007 Status	2008 Status	2009 Status	2010 Status	2011 Status	Average	Target	Variance	Achieve Target																								
Canfor	100.0%	100.0%	100.0%	100.0%	100%	100%	100.0%	100.0%	0%	Annually																								
Forecast	Upon competition 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.																																	
<b>Target</b>	100% of blocks reviewed annually will meet target.																																	
Basis for the Target	Legal requirements, “Coarse Woody Debris Best Management Practices”, “Chief Forester’s Guidance on Coarse Woody Debris Management”, and studies conducted in the defined forest area on “Post-harvest Monitoring for Coarse Woody Debris and Stand Structural Retention 2008”.																																	
<b>Monitoring &amp; Measurement</b> Periodic	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 Canfor’s incident tracking system.																																	
Annual	Report compliance with legal requirements and conformance with operational guidelines for CWD management based on blocks reviewed as part of implementation monitoring. On a yearly 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.																																	
Variance	None																																	

*5.7.14 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>	3.2.1(a). Sensitive watersheds that are above Peak Flow targets will have mitigation measures instituted. 3.2.1(b). % of high hazard drainage structures in sensitive watersheds with identified water quality concerns that have mitigation strategies implemented
<b>Element(s)</b>	3.2 Water Quality and Quantity
<b>Value(s) and Objective(s)</b>	<u>Value 3.2:</u> Water Quantity and Quality <u>Objective 3.2:</u> Water quantity and quality are sustained through their characteristic range of variation, on the DFA through time.
<b>Strategy(s)</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 effect 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 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 impacting water quality.</p> <p>Target 3.2.1(a) is a measure of a select group of watersheds within the DFA that have been identified as sensitive. Sensitive watersheds in the Morice TSA are listed in the table under <i>Forecast, Predicted Results or Outcomes</i>” below. These watersheds have an assigned target for peak flow. Equivalent Clearcut Area (ECA) will be used as a measure of peak flow in the Morice DFA. Any harvest activity that is planned in any of the sensitive watersheds with ECA’s over 30% will automatically require mitigation measures instituted. This is due to the standardized Peak Flow Index (PFI) sensitivity threshold, which have been set at 30%. Refer to the forecast section for details on PFI calculation. Forest Professionals have the option of using several different mitigation approaches that will relate to the specific terrain, block size, elevation, channel stability, buffering (lakes, wetlands) and climate pertaining to each watershed. Examples of mitigation measures and professional due diligence are as follows:</p> <ul style="list-style-type: none"> <li>• Stream crossing quality surveys;</li> <li>• Inventory reviews (ground review of disturbed areas to determine hydrologic recovery);</li> <li>• Deactivation to manage runoff and ditch flow by the follow specific features or tools;</li> <li>• Ditch blocks;</li> <li>• Sumps ;</li> <li>• Silt fences;</li> </ul>

	<ul style="list-style-type: none"> <li>• Cross drains;</li> <li>• Grass seeding the cut or fill slopes and the road bed; and</li> <li>• Water bars;</li> </ul> <p>Target 3.2.1(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 the mitigation measures listed above.</p>																																																																																				
<p>Means of Achieving Objective &amp; Target</p>	<p>3.2.1(a)</p> <p>Conduct inventory of sensitive watersheds and assign peak flow target to each. Where peak flow targets are exceeded in a sensitive watershed (either currently or as a result of planned activity) implement mitigation measures. These measures may be guided by stream quality crossing index surveys (indicator 3.2.1(b)), height performance of regenerating stands, road inspections, channel stability assessments, or other suitable assessments as determined by the qualified professional.</p> <p>3.2.1(b)</p> <p>Conduct inventory of high hazard drainage structures within sensitive watersheds and develop mitigation strategy for each of the structures. Action plans with respect to the identified drainage structures are being implemented.</p>																																																																																				
<p><b>Current Status</b></p> <p>Predicted Results or Outcome</p>	<p><b>3.2.1(a).</b> The following table identifies the current status and future state of sensitive watersheds in the DFA.</p> <table border="1" data-bbox="418 1024 1419 1875"> <thead> <tr> <th>Watershed ID</th> <th>Watershed Name</th> <th>Watershed area (Ha.)</th> <th>Current ECA area (Ha.)</th> <th>PCT</th> <th>Future ECA area (Ha.) 2013</th> <th>PCT</th> </tr> </thead> <tbody> <tr> <td>BABLWSD000054</td> <td>TACHEK CREEK</td> <td>9,710.5</td> <td>679.9</td> <td>7.0</td> <td>720.7</td> <td>7.4</td> </tr> <tr> <td>BULKWSD000088</td> <td>RICHFIELD CREEK</td> <td>15,350.1</td> <td>810.1</td> <td>5.3</td> <td>816.0</td> <td>5.3</td> </tr> <tr> <td>BULKWSD000096</td> <td>MCQUARRIE CREEK</td> <td>6,103.3</td> <td>508.1</td> <td>8.3</td> <td>484.3</td> <td>7.9</td> </tr> <tr> <td>BULKWSD000129</td> <td>BUCK CREEK</td> <td>33,129.7</td> <td>9,032.3</td> <td>27.3</td> <td>10,773.9</td> <td>32.5</td> </tr> <tr> <td>BULKWSD000136</td> <td>KLO CREEK</td> <td>7,579.3</td> <td>584.8</td> <td>7.7</td> <td>984.0</td> <td>13.0</td> </tr> <tr> <td>MORRWSD000004</td> <td>HOUSTON TOMMY CREEK</td> <td>15,272.0</td> <td>2,608.9</td> <td>17.1</td> <td>2,795.5</td> <td>18.3</td> </tr> <tr> <td>MORRWSD000046</td> <td>OWEN CREEK</td> <td>22,375.7</td> <td>7,254.4</td> <td>32.4</td> <td>6,598.8</td> <td>29.5</td> </tr> <tr> <td>MORRWSD000053</td> <td>LAMPREY CREEK</td> <td>16,551.1</td> <td>5,722.9</td> <td>34.6</td> <td>6,217.6</td> <td>37.6</td> </tr> <tr> <td>MORRWSD000054</td> <td>PIMPERNEL CREEK</td> <td>6,780.9</td> <td>2,973.3</td> <td>43.8</td> <td>3,043.3</td> <td>44.9</td> </tr> <tr> <td>MORRWSD000055</td> <td>MCBRIDE CREEK</td> <td>11,121.6</td> <td>3,910.3</td> <td>35.2</td> <td>3,904.3</td> <td>35.1</td> </tr> <tr> <td>MORRWSD000063</td> <td>Objective</td> <td>3,706.8</td> <td>989.7</td> <td>26.7</td> <td>994.8</td> <td>26.8</td> </tr> </tbody> </table>	Watershed ID	Watershed Name	Watershed area (Ha.)	Current ECA area (Ha.)	PCT	Future ECA area (Ha.) 2013	PCT	BABLWSD000054	TACHEK CREEK	9,710.5	679.9	7.0	720.7	7.4	BULKWSD000088	RICHFIELD CREEK	15,350.1	810.1	5.3	816.0	5.3	BULKWSD000096	MCQUARRIE CREEK	6,103.3	508.1	8.3	484.3	7.9	BULKWSD000129	BUCK CREEK	33,129.7	9,032.3	27.3	10,773.9	32.5	BULKWSD000136	KLO CREEK	7,579.3	584.8	7.7	984.0	13.0	MORRWSD000004	HOUSTON TOMMY CREEK	15,272.0	2,608.9	17.1	2,795.5	18.3	MORRWSD000046	OWEN CREEK	22,375.7	7,254.4	32.4	6,598.8	29.5	MORRWSD000053	LAMPREY CREEK	16,551.1	5,722.9	34.6	6,217.6	37.6	MORRWSD000054	PIMPERNEL CREEK	6,780.9	2,973.3	43.8	3,043.3	44.9	MORRWSD000055	MCBRIDE CREEK	11,121.6	3,910.3	35.2	3,904.3	35.1	MORRWSD000063	Objective	3,706.8	989.7	26.7	994.8	26.8
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	<p>The current and future peak flow was calculated as follows:</p> <p>The inventory is projected to the current year using an estimate of 0.30m growth per year. Highways are buffered 10m, FSRs and mainlines 7.5m and block roads 5m All 0% recovery. Harvested cut blocks estimated recovery is based on the height of the crop trees that have been established. 0-3m tree height 0 %, 3m to 5m tree height 25%, 5m to 7m 50%, 7m to 9m 75%, greater than 9m 100%. The area of the harvesting above the H<sub>60</sub> Line are multiplied by 1.5. Dead pine stand recovery is based on the pine percentage in the stand . Greater than 70% PL= 50%, 31 to 70 % PL= 80% .</p> <p>The future state is estimated based on planned blocks being harvested in sensitive watersheds that are scheduled for harvest by the end of 2013. These blocks are assumed to be harvested with a 0% recovery.</p> <p><b>3.2.1(b).</b> Mitigation strategies are developed and implemented for 100% of high risk drainage structures in sensitive watersheds.</p> <table border="1"> <thead> <tr> <th>Licensee</th> <th>Licensee Reporting Period</th> <th>2005 Status</th> <th>2006 Status</th> <th>2007 Status</th> <th>2008 Status</th> <th>2009 Status</th> <th>2010 Status</th> <th>2011 Status</th> </tr> </thead> <tbody> <tr> <td>Canfor</td> <td>Jan 1 – Dec 31</td> <td>100%</td> <td>100%</td> <td>100%</td> <td>0% (0/2)</td> <td>100% (2/2)</td> <td>100%</td> <td>100%</td> </tr> </tbody> </table> <p>The table above will be used as benchmark data starting at year 2005.</p>								Licensee	Licensee Reporting Period	2005 Status	2006 Status	2007 Status	2008 Status	2009 Status	2010 Status	2011 Status	Canfor	Jan 1 – Dec 31	100%	100%	100%	0% (0/2)	100% (2/2)	100%	100%
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Canfor	Jan 1 – Dec 31	100%	100%	100%	0% (0/2)	100% (2/2)	100%	100%																		
Forecast	Acceptable levels of water quality (clean water) and quantity (maintain stream-flow regimes within natural variation). Riparian systems will maintain existing uses and support human and ecological communities and aquatic life. Introduction of sedimentation into watercourses' is minimized.																									
Target	<p>3.2.1(a): 100% of sensitive watershed will have further assessments if they are above the peak flow target. The initial peak flow target is 30%.</p> <p>3.2.1(b): 100% of high hazard drainage structures in sensitive watersheds will have mitigations strategies implemented.</p>																									
Basis for the Target	Places emphasis and resources on most sensitive and high risk areas. Ensures focused assessment of watershed conditions and drainage structures.																									
Monitoring & Measurement Periodic	Fisheries sensitive watersheds may be developed in the Morice and Lakes TSAs 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	<p><b>3.2.1(a).</b> 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. Report road density index (RDI) by sensitive watershed</p> <p><b>3.2.1(b).</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.</p>																									
Variance	<p>3.2.1 (a)- 10%</p> <p>3.2.1(b) none.</p>																									

[Element 4.1 Carbon Uptake and Storage]

The indicator for Element 4.1 is covered under indicators 1.1.3, 2.1.1 and 2.2.1 (above).

[Element 4.2 Forest Land Conversion]

The indicator for Element 4.2 is covered under indicator 2.2.1 (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).



*5.7.15 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>	<p><u>Value 5.1:</u> A balanced supply and variety of timber and non- timber Products, services and benefits on the DFA</p> <p><u>Objective(s) 5.1:</u></p> <ul style="list-style-type: none"> <li>A sustainable harvest and use of non-timber forest products services and benefits</li> <li>A variety of agricultural products are provided from the DFA</li> <li>A full range of recreation opportunities are provided on the DFA</li> </ul>
<b>Strategy(s)</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>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><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, etc. 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.</p>
Means of Achieving Objective & Target	<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>Continued 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>

<p><b>Current Forecast</b> Predicted Results or Outcome</p>	<p><b>Target 5.1.1(b).</b> The table below shows the reporting format and current status of conformance with strategies for non-timber benefits identified in Plans.</p> <table border="1" data-bbox="609 310 1243 1031"> <thead> <tr> <th>Value</th> <th>Plans<sup>1</sup></th> <th>Non- conformances<sup>2</sup></th> <th>Pct</th> </tr> </thead> <tbody> <tr> <td>Recreation</td> <td>1</td> <td>0</td> <td>100</td> </tr> <tr> <td>VQO</td> <td>1</td> <td>0</td> <td>100</td> </tr> <tr> <td>Range</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>Guide</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>Trapper</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>Lodge</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>Air Quality</td> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>Other</td> <td>4</td> <td>0</td> <td>100</td> </tr> <tr> <td><b>Total</b></td> <td><b>6</b></td> <td><b>0</b></td> <td><b>100</b></td> </tr> </tbody> </table> <p><sup>1</sup> - Plans that have commitments identified. <sup>2</sup> - Plans that did not meet their commitments.</p>	Value	Plans <sup>1</sup>	Non- conformances <sup>2</sup>	Pct	Recreation	1	0	100	VQO	1	0	100	Range	0	0		Guide	0	0		Trapper	0	0		Lodge	0	0		Air Quality	0	0		Other	4	0	100	<b>Total</b>	<b>6</b>	<b>0</b>	<b>100</b>
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Lodge	0	0																																							
Air Quality	0	0																																							
Other	4	0	100																																						
<b>Total</b>	<b>6</b>	<b>0</b>	<b>100</b>																																						
<p>Forecast</p>	<p>Short and long term harvest flows that reflect forest conditions, forest practices, and the socio-economic objectives of the Crown. (see indicator 2.2.2 for more detail on forecast). Forest operations that respect and reflect the interests of non-timber resource users, local public and Aboriginals.</p>																																								
<p><b>Target</b></p>	<p>5.1.1(b). 100%</p>																																								
<p>Basis for the Target</p>	<p>Developed with input from stakeholders, broader public and Aboriginals. Essential that holders of overlapping land use tenures, communicate regularly with one another and with the public and Aboriginals. Conforming to commitments in plans will help measure the company's performance of operating on public lands.</p>																																								
<p><b>Monitoring &amp; Measurement</b> Periodic</p>																																									
<p>Annual</p>	<p>Report the number of cutblocks harvested having operational plan non-conformances related to non-timber resource users. Also report the total number of cutblocks harvested that contained commitments involving non-timber resource users</p>																																								
<p>Variance</p>	<p>0</p>																																								

*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). Investment in local communities 5.2.1(b). Benefits directed into local communities by licensee (Local Indicator).
<b>Element(s)</b>	5.2 Communities and Sustainability
<b>Value(s) and Objective(s)</b>	<u>Value 5.2:</u> Healthy and sustainable communities <u>Objective 5.2:</u> A diverse local economy and local participation in the use and management of forest benefits on the DFA.
<b>Strategy(s)</b> Description	<p>5.2.1(a). Investment in local communities</p> <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 indicator, a local contractor or supplier is defined as one that resides within or in the vicinity of the DFA and will include local vendors and suppliers with postal codes that occur within the Defined Forest Area.</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> <p>5.2.1(b). Benefits directed into local communities by licensee.</p> <p>Benefits directed toward local communities by the forest licensees contribute to the distribution of benefits obtained from the surrounding forest resources. With forestry as the primary industry in local communities, licensees can demonstrate good corporate citizenship through various volunteer contribution mechanisms such as providing scholarships, sponsorship, corporate donations, etc. The licensees also demonstrate their commitment to investing in the community for present and future generations by maintaining a certain level of benefits to the local communities over time.</p> <p>This indicator tracks the volunteer contributions (in dollars) made by Canfor toward the local communities in the Morice TSA on an annual basis. Examples of these contributions can be scholarships, donations (cash and in-kind contributions) and sponsorship.</p>
<b>Means of Achieving Objective &amp; Target</b>	Companies track all spending pertaining to forest related activities (operations, management, donations) within the DFA, separated by that occurring locally.

<p><b>Current Status</b></p> <p>Predicted Results or Outcome</p>	<p>5.2.1(a). The following table identifies the percentage of total goods and services provided by local vendors for previous reporting periods.</p> <table border="1" data-bbox="423 275 1276 396"> <thead> <tr> <th>2005 Status</th> <th>2006 Status</th> <th>2007 Status</th> <th>2008 Status</th> <th>2009 Status</th> <th>2010 Status</th> </tr> </thead> <tbody> <tr> <td>40.99%</td> <td>34.27%</td> <td>39.51%</td> <td>52.17%</td> <td>45.0%</td> <td>48.0%</td> </tr> </tbody> </table> <p>5.2.1(b). The following table identifies the dollar value of benefits directed into local communities for previous reporting periods.</p> <table border="1" data-bbox="423 478 1385 615"> <thead> <tr> <th>2006 Status</th> <th>2007 Status</th> <th>2008 Status</th> <th>2009 Status</th> <th>2010 Status</th> <th>5-yr rolling average</th> </tr> </thead> <tbody> <tr> <td>\$39,244.91</td> <td>\$29,000.00</td> <td>\$28,248.20</td> <td>\$34,390.00</td> <td>\$8,113.25</td> <td>\$27,799.27</td> </tr> </tbody> </table>	2005 Status	2006 Status	2007 Status	2008 Status	2009 Status	2010 Status	40.99%	34.27%	39.51%	52.17%	45.0%	48.0%	2006 Status	2007 Status	2008 Status	2009 Status	2010 Status	5-yr rolling average	\$39,244.91	\$29,000.00	\$28,248.20	\$34,390.00	\$8,113.25	\$27,799.27
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\$39,244.91	\$29,000.00	\$28,248.20	\$34,390.00	\$8,113.25	\$27,799.27																				
<p>Forecast</p>	<p>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.</p>																								
<p><b>Target</b></p>	<p>5.2.1(a). Percent of dollars spent in local communities; 5-year rolling average. Target will be 45.0%.</p> <p>5.2.1(b). Amount of benefits directed into local communities; 5-year rolling average. Target will be \$38,000.</p>																								
<p>Basis for the Target</p>	<p>Target based on past performance from indicator M24 and reflects a desire to maintain or enhance community well-being.</p>																								
<p><b>Monitoring &amp; Measurement</b></p> <p>Periodic</p>																									
<p>Annual</p>	<p>5.2.1(a). Use internal accounting systems to calculate and report out on the percent of dollars spent in local communities during the reporting period.</p> <p>5.2.1(b). Use internal accounting systems to calculate and report out on the (5 year rolling average) amount of benefits directed into local communities during the reporting period.</p>																								
<p>Variance</p>	<p>5.2.1(a). -10%</p> <p>5.2.1(b). -10%</p>																								

*5.7.16 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 and 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> Healthy and sustainable communities <u>Objective 5.2:</u> A diverse local economy and local participation in the use and management of forest benefits on the DFA.									
<b>Strategy(s)</b> Description	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.									
Means of Achieving Objective & Target	Canfor invests 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</b> Predicted Results or Outcome	The following table shows the level of Employee and Contractor training in environmental and safety procedures in compliance with Canfor's training plans (2010 Baseline data). <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Licensee</th> <th>2010 Status</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td>Canfor Employees</td> <td>100%<sup>1</sup></td> <td>100%</td> </tr> <tr> <td>Canfor Contractors</td> <td>100%</td> <td>100%</td> </tr> </tbody> </table> <p><sup>1</sup>Tracking system unable to report on all 2010 training for employees due to information override from current status. See Houston training report. Although training in 2011 is 98%. 100% of contractors received training through annual pre-work training and SAFE company certification.</p>	Licensee	2010 Status	Target	Canfor Employees	100% <sup>1</sup>	100%	Canfor Contractors	100%	100%
Licensee	2010 Status	Target								
Canfor Employees	100% <sup>1</sup>	100%								
Canfor Contractors	100%	100%								
Forecast	Forest planning and operations are conducted with a genuine focus on worker safety and environmental stewardship. Forest contractors and employees have the adequate knowledge and tools to conduct their jobs, performing well even under upset conditions.									
<b>Target</b>	100% of company employees and contractors will have both environmental and safety training as identified on licensee training plans.									
Basis for the Target	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</b> Periodic	When training is completed by contractors or employees it will be necessary to track training taken by 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.
Annual	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.
Variance	- 10%

*5.7.17 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. Maintain average level of direct and indirect employment
<b>Element(s)</b>	5.2 Communities and Sustainability
<b>Value(s) and Objective(s)</b>	<u>Value 5.2:</u> Healthy and sustainable communities <u>Objective 5.2:</u> A diverse local economy and local participation in the use and management of forest benefits on the DFA.
<b>Strategy(s)</b> Description	<p>Forests represent not only a return on investment (measured, for example, in dollar value, person-days, donations, etc.) for the organization but also a source of income and non-financial benefits for DFA-related workers, 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-dependant. 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>Using 2006 data from British Columbia Stats specific to the Nadina Forest District the multiplier is approximately 2.65 direct, indirect, and induced jobs per 1000 m<sup>3</sup> of harvest. This includes 1.25 jobs per 1000 m<sup>3</sup> of volume harvested for logging and 1.40 jobs per 1000 m<sup>3</sup> of volume harvested for wood manufacturing.</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</b> Predicted Results or Outcome	The following table specifies 5-year rolling averages for harvest volumes. Based on historical data the overall average harvest volume is 924,676m <sup>3</sup> . This compares to an allocated AAC of 940,424m <sup>3</sup> . Using the allocated AAC and a multiplier of 2.65 jobs per 1000 m <sup>3</sup> of volume harvested the average level of direct and indirect employment maintained would be 2492.

	<h3 style="text-align: center;">Jobs based on cut level</h3> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>2002 - 2006</th> <th>2003 - 2007</th> <th>2004 - 2008</th> <th>2005 - 2009</th> <th>2006 - 2010</th> <th>2007 - 2011</th> </tr> </thead> <tbody> <tr> <td>◆ Target Canfor</td> <td>2,492</td> <td>2,492</td> <td>2,492</td> <td>2,492</td> <td>2,492</td> <td>2,492</td> </tr> <tr> <td>■ Variance Canfor</td> <td>2243</td> <td>2243</td> <td>2243</td> <td>2243</td> <td>2243</td> <td>2243</td> </tr> <tr> <td>▲ Jobs Canfor</td> <td>2,700</td> <td>2,393</td> <td>2,163</td> <td>2,173</td> <td>2,655</td> <td>2,655</td> </tr> </tbody> </table> <p style="text-align: center;">Year</p> <p style="text-align: center;">◆ Target Canfor    ■ Variance Canfor    ▲ Jobs Canfor</p>		2002 - 2006	2003 - 2007	2004 - 2008	2005 - 2009	2006 - 2010	2007 - 2011	◆ Target Canfor	2,492	2,492	2,492	2,492	2,492	2,492	■ Variance Canfor	2243	2243	2243	2243	2243	2243	▲ Jobs Canfor	2,700	2,393	2,163	2,173	2,655	2,655
	2002 - 2006	2003 - 2007	2004 - 2008	2005 - 2009	2006 - 2010	2007 - 2011																							
◆ Target Canfor	2,492	2,492	2,492	2,492	2,492	2,492																							
■ Variance Canfor	2243	2243	2243	2243	2243	2243																							
▲ Jobs Canfor	2,700	2,393	2,163	2,173	2,655	2,655																							
Forecast	Cut controlled is monitored quarterly. Efforts are made to maintain cut control on all licenses. . This strategy can be anticipated to maintain cut control close to the 100% over the five year cut control period.																												
<b>Target</b>	1,264,924m <sup>3</sup> * 2.65jobs/1000m <sup>3</sup> = 3352 direct and indirect jobs starting in 2014 with additional license.																												
Basis for the Target	Allocated AAC by licensee and employment multiplier statistics from 2006 British Columbia Stats specific to the Nadina Forest District provides consistent average measure.																												
<b>Monitoring &amp; Measurement</b> Periodic	Update inputs used to derive targets for this indicator. As changes occur over time to the licensee AAC and/or the employment multiplier from British Columbia Stats specific to the Forest Industry in the Nadina Forest District it will be necessary to update as required.																												
Annual	Report the 5-year rolling average harvest volume for the most recent year available and use the employment multiplier to determine the level of direct and indirect employment maintained relative to the target.																												
Variance	-10% or 335 jobs per year																												



*5.7.18 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> Healthy and sustainable communities <u>Objective 5.2:</u> A diverse local economy and local participation in the use and management of forest benefits on the DFA.				
<b>Strategy(s)</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 Canfor's efforts to build capacity within Aboriginal communities on matters related to the forest industry. The target recognizes that there are occasions when Aboriginals, after being given the opportunity, elect not to participate and is respectful of those decisions.				
Means of Achieving Objective & Target	Canfor engages in building mutually beneficial relationships with Aboriginal peoples.				
<b>Current Status</b> Predicted Results or Outcome	The following table shows the number of opportunities for Aboriginals to participate in the forest economy provided by Canfor (2010 Baseline data). <table border="1" style="margin-left: auto; margin-right: auto;"><thead><tr><th>2010 Status</th><th>Target</th></tr></thead><tbody><tr><td style="text-align: center;">4</td><td style="text-align: center;">≥5</td></tr></tbody></table> Preliminary targets have been established and the Monitoring Report results will be used to modify the target moving forward.	2010 Status	Target	4	≥5
2010 Status	Target				
4	≥5				
Forecast	Operational activities and plans that recognize and manage for known Aboriginal rights and duly established title. Canfor supports Aboriginals in building organizational capacity.  As a responsible steward of public forest land, Canfor engages in building mutually beneficial relationships with Aboriginal peoples.				
<b>Target</b>	Number of opportunities; three-year rolling average. ≥ 5				
Basis for the Target	Canfor engages in building mutually beneficial relationships with Aboriginal peoples.				
<b>Monitoring &amp; Measurement</b> Periodic					
Annual	Report on the number of working relationships with applicable First Nations (partnerships, joint ventures, co-operative agreements, memorandums of understanding, or business contracts over \$5,000 or over 500 cubic meters in volume) during the reporting year. Examples of a business contract include a specific work/service agreement or joint tenure arrangement with a First Nation Band or First Nation Contractor. For consistency in reporting,				

	<p>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 First Nations that, for whatever reason, were declined.</p> <p>Performance is based on a <b>three year rolling average</b>. For example the 2014 performance target is achieved if the 2012 to 2014 average is <math>\geq</math> to the proposed target.</p>
Variance	-10%

*5.7.19 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 and Treaty Rights <u>Objective 6.1:</u> Recognition and respect of aboriginal rights.				
<b>Strategy(s)</b> Description	<p>Section 35 of the <i>Constitution Act</i> states “The existing aboriginal and treaty rights of Aboriginal Peoples of Canada are hereby recognized and affirmed”. Some examples of the rights that Section 35 has been found to protect include hunting, fishing, trapping, gathering, sacred and spiritual practices, and title. SFM requirements are not in any way intended to define, limit, interpret, or prejudice ongoing or future discussions and negotiations regarding these legal rights and do not stipulate how to deal with Aboriginal title and rights, and treaty rights.</p> <p>The first step toward respecting Aboriginal title and rights, and treaty rights is compliance with the law. Section 7.3.3 of the CSA Z809 Standard reinforces legal requirements for many reasons, including the reality that demonstrating respect for Aboriginal title and rights, and treaty rights can be challenging in Canada’s fluid legislative landscape and therefore it is important to identify these legal requirements as a starting point. It is important for 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 Canfor 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	Companies invest in cultural awareness and skill development by ensuring that appropriate Forest Management Group employees have received Aboriginal awareness training. Training to occur as part of training/orientation program for appropriate new employees, as outlined in each companies 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. (2010 Baseline data).</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>2010 Status</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td>0%*</td> <td>100%</td> </tr> </tbody> </table> <p>*Aboriginal awareness training occurred in 2009 for the entire division of Canfor. By Roxanne Yanishewski</p>	2010 Status	Target	0%*	100%
2010 Status	Target				
0%*	100%				
Forecast	Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local Aboriginals.				
<b>Target</b>	100% of employees trained in Aboriginal awareness as outlined in the companies training matrix.				

<p>Basis for the Target</p>	<p>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. Canfor 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.</p>
<p><b>Monitoring &amp; Measurement</b> Periodic</p>	
<p>Annual</p>	<p>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.</p>
<p>Variance</p>	<p>-10%</p>

*5.7.20 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>	<b>6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans.</b> <b>6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities</b>
<b>Indicator Statement(s)</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>Element(s)</b>	6.1 Aboriginal and Treaty Rights 6.4 Fair and Effective Decision-Making
<b>Value(s) and Objective(s)</b>	Value 6.1: Aboriginal title and right and treaty rights. Objective 6.1: Recognition and respect for Aboriginal and treaty rights Value 6.4: Fair, equitable and effective public participation. Objective 6.4: A public involvement process designed, implemented and functioning to the satisfaction of the participants.
<b>Strategy(s)</b> Description	The first step toward respecting Aboriginal title and rights, and treaty rights is compliance with the law. Section 7.3.3 of the CSA Z809 Standard reinforces legal requirements for many reasons, including the reality that demonstrating respect for Aboriginal title and rights, and treaty rights can be challenging in Canada’s evolving legislative landscape. Therefore it is important to identify these legal requirements as a starting point. It is important for the organization to have an understanding of asserted Aboriginal title and rights, and treaty rights, as well as the Aboriginal interests that relate to the DFA.  Open, respectful communication with local Aboriginal communities includes not only the organization 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 reference to “Aboriginal communities” corresponds to licensees interacting with the Natural Resources Office and Chief and Council (or equivalent positions).  For the purpose of this indicator, “management plans” include Forest Stewardship Plans, Pest Management Plans, block information sharing, and SFM Plans. For the purposes of this indicator, clear understanding is 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.
Means of Achieving Objective & Target	Open, respectful communication of forest management plans with affected local Aboriginals. “Best efforts” 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</b> Predicted Results or Outcome	The following table shows the current status of evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans. (2010 Baseline data). <table border="1" data-bbox="776 306 1081 428"> <thead> <tr> <th data-bbox="776 306 907 380">2010 Status</th> <th data-bbox="907 306 1081 380">Target</th> </tr> </thead> <tbody> <tr> <td data-bbox="776 380 907 428">100%</td> <td data-bbox="907 380 1081 428">100%</td> </tr> </tbody> </table>	2010 Status	Target	100%	100%
2010 Status	Target				
100%	100%				
Forecast	Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local Aboriginals.				
<b>Target</b>	>=3 approaches/Aboriginal community within the DFA, for 100% of management plans, as required.				
Basis for the Target	Legal obligations and alignment with Canfor’s Environmental Policy and Sustainable Forest Management Commitments.				
<b>Monitoring &amp; Measurement</b> Periodic					
Annual	Retain a record of the Aboriginal communities whose asserted traditional territory overlaps with the DFA for the purpose of communication with affected aboriginal communities. Report 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. The annual report will document the number of Information Packages provided to each Aboriginal community. Best efforts and clear understanding will be highlighted through tracking 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. “				
Variance	0%				

*5.7.21 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(a). Percent of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses					
<b>Element(s)</b>	6.1 Aboriginal and Treaty Rights					
<b>Value(s) and Objective(s)</b>	Value 6.1.3: Aboriginal and Treaty Rights <u>Objective 6.1.3: Recognition and respect of aboriginal rights.</u>					
<b>Strategy(s)</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>					
<b>Means of Achieving Objective &amp; Target</b>	<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 that includes a sharing of information and enables Canfor to understand and incorporate traditional knowledge into operational plans. Canfor is aware of culturally important, sacred and spiritual sites leading to their appropriate management or and 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 and 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 cutblocks and roads have a Cultural Heritage Resource (CHR) assessment completed.</p>					
<b>Current Status</b> Predicted Results or Outcome	<p>The following table shows the percent of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses (2010 Baseline data).</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>2010 Status</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td>100%</td> <td>100%</td> </tr> </tbody> </table>		2010 Status	Target	100%	100%
2010 Status	Target					
100%	100%					

Forecast	<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>
<b>Target</b>	<p>100% compliance with operational plans and corresponding results and strategies.</p> <p>100% of blocks and roads that have had a CHR assessment completed.</p> <p>100% of blocks and roads have a completed consultation record.</p>
Basis for the Target	Legal obligations, alignment with Canfor Sustainable Forest Management Commitments.
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	<p>Number of roads constructed or cutblocks harvested where operational plans had specific content requirements to manage or protect Aboriginal forest values, knowledge and uses.</p> <p>Number of roads constructed or cutblocks harvested referenced above where plan requirements were followed.</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:</p> <p>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.</p> <p>Number of cut blocks and roads where CHR assessments were completed.</p> <p>Number of cutblocks and roads where there is a record of consultation.</p>
Variance	0



[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).

*5.7.22 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. Primary products, by-products, and services that are bought, sold, traded, or utilized with other forest dependent businesses forest users, and the community 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> Strength and Diversity in the economy <u>Objective 6.3:</u> Participate in the local economy by having relationships with forest dependant businesses.																			
<b>Strategy(s)</b> Description	<p>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.</p> <p>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.</p> <p>For the purposes of this indicator, local area is defined as Houston, Topley and Granisle postal codes.</p>																			
Means of Achieving Objective & Target	Participating licensees seek and maintain active, mutually beneficial business relationships (purchases, sales, service 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, pulp. Examples of by-products include chips, sawdust, shavings, hog fuel and trim blocks.																			
<b>Current Status</b> Predicted Results or Outcome	<p>The following table summarizes Canfor’s performance for 2011. This was used to set the initial target.</p> <table border="1"> <thead> <tr> <th>Product</th> <th>Number of opportunities</th> <th>Organization</th> </tr> </thead> <tbody> <tr> <td>Logs</td> <td>8</td> <td>Decker Lake, HPLP, Hunky Dory, Tahtsa Timber, Kermodei, Steve Corneau, Clark Milling, Groot Bros.</td> </tr> <tr> <td>Trim Blocks</td> <td>3</td> <td>Kyah, D7H, Brinks/PVR</td> </tr> <tr> <td>Sawdust/shavings</td> <td>1</td> <td>Houston Pellet (HPLP)</td> </tr> <tr> <td>Chips</td> <td>1</td> <td>Canfor Pulp limited Partnership</td> </tr> <tr> <td>Total</td> <td>13</td> <td></td> </tr> </tbody> </table>		Product	Number of opportunities	Organization	Logs	8	Decker Lake, HPLP, Hunky Dory, Tahtsa Timber, Kermodei, Steve Corneau, Clark Milling, Groot Bros.	Trim Blocks	3	Kyah, D7H, Brinks/PVR	Sawdust/shavings	1	Houston Pellet (HPLP)	Chips	1	Canfor Pulp limited Partnership	Total	13	
Product	Number of opportunities	Organization																		
Logs	8	Decker Lake, HPLP, Hunky Dory, Tahtsa Timber, Kermodei, Steve Corneau, Clark Milling, Groot Bros.																		
Trim Blocks	3	Kyah, D7H, Brinks/PVR																		
Sawdust/shavings	1	Houston Pellet (HPLP)																		
Chips	1	Canfor Pulp limited Partnership																		
Total	13																			
Forecast	Support for local communities through business relationships provides employment diversification and increased local revenue.																			
<b>Target</b>	Maintain ≥13 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	
Annual	Report on the number of purchase, sale, service 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	-20%

*5.7.23 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 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> Healthy and sustainable communities</p> <p><u>Objective 6.3:</u> A diverse local economy and local participation in the use and management of forest benefits on the DFA.</p>
<b>Strategy(s)</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</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</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</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>
<b>Means of Achieving Objective &amp; Target</b>	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.
Forecast	From 1998 to 2005, WorkSafe BC accepted an average of nearly 22 harvesting fatality claims each year — the worst in 2005 with 34 claims. But the industry averaged fewer than 14 fatalities from 2006 to 2008. 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	
Annual	Report whether third-party safety certification has been maintained on the DFA.
Variance	None

*5.7.24 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 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> Fair, equitable and effective public participation <u>Objective 6.4:</u> A public involvement process designed and implemented to the satisfaction of the participants
<b>Strategy(s)</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 participating licensees 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, evaluate results and recommend improvements; and</li> <li>• Discuss and resolve 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</b></p> <p>Predicted Results or Outcome</p>	<p>Starting in July of 2007 a Public Advisory Group meeting evaluation survey has been completed as part of every PAG meeting and the results and associated opportunities for improvement have been discussed at subsequent meetings. The following table shows a summary of the average meeting satisfaction score based on responses received.</p> <table border="1" data-bbox="578 338 1276 961"> <thead> <tr> <th>PAG Meeting Number - Date</th> <th>Average Meeting Score</th> </tr> </thead> <tbody> <tr><td>63 - July 2007</td><td>4.09</td></tr> <tr><td>64 - January 2008</td><td>3.85</td></tr> <tr><td>65 - January 2009</td><td>3.99</td></tr> <tr><td>66 - November 2009</td><td>4.24</td></tr> <tr><td>67 - December 2010</td><td>3.87</td></tr> <tr><td>68 - February 2011</td><td>4.01</td></tr> <tr><td>69 – March 2011</td><td>4.2</td></tr> <tr><td>70 – April 2011</td><td>4.2</td></tr> <tr><td>71 –May 2011</td><td>4.0</td></tr> <tr><td>72 – August 2011</td><td>4.1</td></tr> <tr><td>73 – October 2011</td><td>4.1</td></tr> <tr><td>74- March 2012</td><td>4.3</td></tr> <tr><td>75 – July 2012</td><td>4.4</td></tr> <tr><td>76 – July 2013</td><td>4.2</td></tr> <tr><td>77 – November 2013</td><td>3.9</td></tr> <tr><td>78 – April 2014</td><td>4.4</td></tr> </tbody> </table> <p>Based on the results to date when the scores above for all meetings are averaged the overall meeting satisfaction score for PAG member satisfaction is 4.</p>	PAG Meeting Number - Date	Average Meeting Score	63 - July 2007	4.09	64 - January 2008	3.85	65 - January 2009	3.99	66 - November 2009	4.24	67 - December 2010	3.87	68 - February 2011	4.01	69 – March 2011	4.2	70 – April 2011	4.2	71 –May 2011	4.0	72 – August 2011	4.1	73 – October 2011	4.1	74- March 2012	4.3	75 – July 2012	4.4	76 – July 2013	4.2	77 – November 2013	3.9	78 – April 2014	4.4
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<p>Forecast</p>	<p>Active and engaged Public Advisory Group.</p>																																		
<p><b>Target</b></p>	<p>Complete Public Advisory Group evaluation form at end of each meeting, assess results and develop action plans at subsequent meeting when the overall average PAG meeting satisfaction is less than 4.</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></p> <p>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 meeting 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>None</p>																																		

*5.7.25 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. Numbers of educational opportunities for information and/or training that are delivered to the Public Advisory Group
<b>Element(s)</b>	6.4 Fair and Effective Decision-Making
<b>Value(s) and Objective(s)</b>	Value 6.4.: Fair, equitable and effective public participation. Objective 6.4: A public involvement process designed, implemented and functioning to the satisfaction of the participants.
<b>Strategy(s)</b> Description	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.  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.
Means of Achieving Objective & Target	Canfor is committed to work with members of the PAG on forest management issues and to improve the effectiveness of the public processes through capacity development. Canfor will provide informational/educational opportunities for PAG participants on an annual basis as part of regularly held meetings.
<b>Current Status</b> Predicted Results or Outcome	CSA Auditor visit at February 16, 2011 PAG meeting Presentation on the Programme for the Endorsement of Forest Certification (PEFC) at August 30, 2011 PAG Meeting. Presentation on Canfor's Biodiversity Strategy at August 30, 2011 PAG Meeting.
Forecast	Public participation in forest planning and operations that is open, inclusive and responsive to public concerns and grounded in science.
<b>Target</b>	≥ 1
Basis for the Target	Additional knowledge provides for better dialogue and ultimately better decisions.
<b>Monitoring &amp; Measurement</b> Periodic	
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).

*5.7.26 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. Number of people to whom educational opportunities are provided.				
<b>Element(s)</b>	6.5 Information for Decision-Making				
<b>Value(s) and Objective(s)</b>	<u>Value 6.5:</u> Informed decision-making and increased knowledge <u>Objective 6.5:</u> Relevant information is exchanged between interested parties to support decision-making and increased knowledge of ecosystem processes and interactions with forest ecosystems				
<b>Strategy(s)</b> Description	Canfor is committed to working with directly affected stakeholders and members of the public on forest management issues and have 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.				
Means of Achieving Objective & Target	Canfor maintains their involvement in educational outreach initiatives. Examples of educational outreach initiatives include: <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>Canfor will work with the PAG (and others) to identify more opportunities over time. Record attendance level at each meeting or tour (public and stakeholders).</p>				
<b>Current Status</b> Predicted Results or Outcome	The following table shows a summary of the number of people to whom educational opportunities were provided (2010 Baseline data). <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>2010 Status</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">44</td> <td style="text-align: center;">50</td> </tr> </tbody> </table> <p>A draft target has been recommend as a starting point and the subsequent Monitoring Report results will be used to adjust the target and/or variance as required moving forward.</p>	2010 Status	Target	44	50
2010 Status	Target				
44	50				
Forecast	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>	50				
Basis for the Target	Aligns with Canfor’s Environmental Policy and Sustainable Forest Management Commitments				

<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Track and report the number of people to whom educational opportunities are provided. Provide in the Annual Report a description of each type of opportunity.
Variance	-10

*5.7.27 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 monitoring 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 decision making and increased knowledge <u>Objective 6.5:</u> Relevant information is exchanged between interested parties to support decision-making and increased knowledge of ecosystem processes and human interactions with forest ecosystems.
<b>Strategy(s)</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	Canfor maintains an external website that makes the SFM monitoring report publicly available.
<b>Current Status</b> Predicted Results or Outcome	External websites containing the annual SFM monitoring report have been maintained since 2001. <a href="http://www.moricelakes-ifpa.com">http://www.moricelakes-ifpa.com</a> <a href="http://www.canfor.com/responsibility/environmental/certification">http://www.canfor.com/responsibility/environmental/certification</a>
Forecast	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 an external website
Basis for the Target	Provides topical information to local public as well as a worldwide audience. Has contact mechanism for those looking for additional information.
<b>Monitoring &amp; Measurement</b> Periodic	
Annual	Report a yes/no answer as to whether the annual monitoring report was made publically available on an external website.
Variance	None



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

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### **6.1 Strategic Plans**

#### Morice Land and Resource Management Plan (LRMP)

The Government of British Columbia announced the Morice Land and Resource Management Plan (LRMP) on July 18, 2007. The LRMP addresses the long-term balance of environment and economy in the region. It provides 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 Morice TSA. The stability and security provided by the plan provides 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 cutblocks will be located and how harvesting and reforestation will be carried out in FSP's. Licensees are required to prepare a site plan for planned cutblocks and roads prior to harvesting. A site plan must identify the approximate location of cutblocks and roads, be consistent with the Forest Stewardship Plan and identify how the intended results or strategies described in the Forest Stewardship Plan apply to the site.

#### 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 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  
CFP: Canadian Forest Products, Ltd. (Canfor)  
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 Action Regulation  
GWM: General Wildlife Measures  
IFPA: Innovative Forest Practices Agreement  
ISO: International Organization for Standardization  
LRMP: Land and Resource Management Plan  
MFLNRO: BC Ministry of Forests, Lands and Natural Resource Operations  
MPB: Mountain Pine Beetle  
NAR: Net Area to be Reforested  
NDT: Natural Disturbance Type  
NHLB: Non – Harvestable Land Base  
NRFL: Non-Replaceable Forest License  
OAF: Operational Adjustment Factor  
OGMA: Old Growth Management Area  
OGSI: Old Growth Site Index  
PAG: Public Advisory Group  
PAS: Protected Area Strategy  
PEFC: Programme for the Endorsement of Forest Certification  
PEM: Predictive Ecosystem Mapping  
PIR: Partners in Injury Reduction  
PL: Lodgepole Pine  
RDI: Road Density Index  
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  
THLB: Timber Harvesting Land Base  
TOR: Terms of Reference  
TSA: Timber Supply Area  
TSR: Timber Supply Review  
UWR: Ungulate Winter Range  
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.

**Activities** – energetic action or movement; liveliness. (The American Heritage Dictionary of the English Language, Third Edition)

**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)

**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)

**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)

**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)

**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)

**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)** – Downed 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 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)

**Cultural Feature** – 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)

**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)

**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 as 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)

**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)

**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.

**Genetic diversity** – variation among and within species that is attributable to differences in hereditary material. (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

**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)

**Haylage** - Haylage is a name for high dry matter silage of around 45% to 75%.

**High Biodiversity Emphasis Area (HBEA)** – a spatially explicit portion of the forested landscape managed for high biodiversity values, particularly structural integrity. HBEAs are distributed throughout the plan area and are related to, but not limited by, landscape unit boundaries. (MSRM 2004 - Morice Land and Resource Management Plan Final Land Use Recommendation)

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

**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)

**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)

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

**Inoperable lands** – lands that are unsuited for timber production now and in the foreseeable future by virtue of their: 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.

**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)

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

**Range of Natural 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 cutblock in a woodlot license area or community forest agreement area, the portion of the cutblock 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)

**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 cutblocks. (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.

**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.

**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)

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

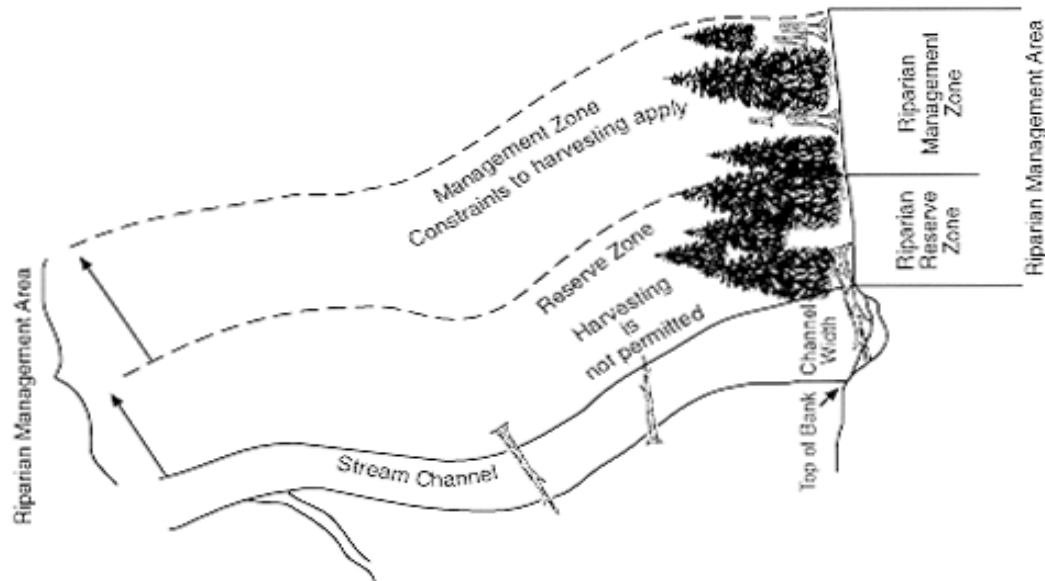
**Riparian Habitat** - Vegetation growing close to a watercourse, lake, swamp, or spring that is generally critical for wildlife cover, fish food organisms, stream nutrients and large organic debris, and for stream bank stability.

**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.

**Road Density Index** – a ratio describing the extent of road development within a given watershed. (Common Usage)

**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 cutblock 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, primarily 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.

**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).

**Standard Operating Procedure (SOP)** – established procedure to be followed in carrying out a given operation or in a given situation. (The American Heritage Dictionary of the English Language, Fourth Edition).

**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>25</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 landbase 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)

**Timber Harvesting Landbase (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)

**Visually Effective Greenup** – the stage at which regeneration is seen by the public as newly established forest. When VEG is achieved the forest cover generally blocks views of tree stumps, logging debris and bare ground. Distinctions in height, colour, and texture may remain between a cutblock and adjacent forest but the cutblock will no longer be seen as recently cut-over. (BC MoF Visual Landscape Design, Training Manual)

**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: 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.

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<sup>25</sup> *The State of Canada's Forests 2001/2002*, as cited by the CSA.

**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).

**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 1 – LIST OF REFERENCES

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

CCFM Criterion	CSA Element	Value	Objective	Core Indicator	Indicator Statement	Target	Previous Morice SFMP Indicator
1. Biological Diversity Conserve biological diversity by maintaining integrity, function, and diversity of living organisms and the complexes of which they are part	1.1 Ecosystem Diversity Conserve ecosystem diversity at the stand and landscape level by maintaining the variety of communities and ecosystems that naturally occur in the DFA	The range of functions, interactions and processes that occur naturally within and between ecosystems on the DFA	Functions, interactions and processes that occur naturally within and between ecosystems on the DFA will fluctuate within a (naturally, socially) acceptable range of variation over time	1.1.1 Ecosystem Area by Type	Percent representation of ecosystem group across the DFA	Rare ecosystems groups identified will not be harvested.	M17 : Percent forest in each patch type by patch size class by BEC Variant
		Abundance and distribution of common and rare habitats within a range of variability over time to conserve species in the DFA.	A constant supply of habitats and/or attributes sufficient to conserve species that occur naturally on the DFA through time.	1.1.2 Forest area by type or species composition	Percent distribution of forest type (treed conifer, treed broad leaf, treed mixed) >20 years old across DFA	Will maintain 85-95% Coniferous, 2.5-7.5% Broadleaf and 2.5-7.5% Mixed stands.	M33: Percent Species Composition by BEC
		The range of functions, interactions and processes that occur naturally within and between	Functions, interactions and processes that occur naturally within and between	1.1.3 Forest area by seral stage or age class	Percent late seral distribution by ecological unit across the DFA	Stay within targets of Percent late seral (old) distribution by ecological unit	M32: Percent Seral Stage Distribution by LRMP Biodiversity Emphasis Area / BEC Combination

		between ecosystems on the DFA	ecosystems on the DFA will fluctuate within a (naturally, socially) acceptable range of variation over time.	1.1.4 Degree of within-stand structural retention	Percent of stand structure retained across the DFA in harvested areas	Landscape level of target 7%	M15: Percent area retained in WTR Annually
					Percent of blocks meeting dispersed retention levels as prescribed in the site plan/logging plan	100%	M53: Percent of Harvesting by Licensee Where Recommended Operational Guidelines Have Been Applied to Retain Structural Habitat Elements
					Number of non-conformances where forest operations are not consistent with riparian management requirements as identified in operation plans.	0	M10: Percent of cut blocks harvested that are consistent with riparian management area commitments
				1.1.5 Degree of habitat connectivity (Local Indicator)	Percent forest in each patch type by patch size class by BEC variant.	Trending toward early seral patch targets. Targets are derived from the Biodiversity Guidebook, and Morice LRMP for the natural disturbance types that occur on the DFA.	M17:Percent forest in each patch type by patch size class by BEC Variant
	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	Abundance and distribution of common and rare habitats within a range of variability over time to conserve	A constant supply of habitats and/or attributes sufficient to conserve species that occur naturally on the	1.2.1 Degree of habitat protection for selected focal species, including species at risk	Percent of forest management activities consistent with management strategies for Species of Management Concern	100% conformance with management strategies.	M53: Percent of Harvesting Where Recommended Operational Guidelines Have Been Applied to Retain Structural Habitat Elements

	known occurrences of species at risk	species on the DFA.	DFA through time.	1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk			M33: Percent Species Composition by BEC
							M37: Total area by Ecosystem & Wildlife Value Class
				1.2.3 Proportion of Regeneration comprised of native species	Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use	100% conformance with Chief Forester's Standards for seed use.	None
	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	The opportunity for individuals within sub-species and species to move and interact within their natural range in and across the DFA.	Habitats for species present on the DFA that are functionally connected over a range of spatial and temporal scales.	No core indicator in Z809-08 for Element 1.3 - waiting for practical indicators to be developed. Proportion of genetically modified trees in reforestation efforts	Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use	100% conformance with Chief Forester's Standards for seed use.	M17: Percent forest in each patch type by patch size class by BEC Variant
							M32: Percent Seral Stage Distribution by LRMP Biodiversity Emphasis Area / BEC Combination
	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	Protected areas and sites of biological and cultural significance are identified and appropriately managed.	Protected areas identified through government processes are respected and accommodated. Biologically and culturally significant areas are identified and management strategies appropriate to their long term maintenance are	1.4.1 Proportion of identified sites with implemented strategies	Percent of forest management activities consistent with management strategies for protected areas and sites of biological significance	100% conformance with management strategies.	M27: Percentage of forest management commitments completed on time resulting from consultations regarding non-timber features and interests
M31: Percent Seral Stage Distribution by Ecosystem & Wildlife Value Class							
Indicator M37: Total area by Ecosystem &							



	DFA and implement management strategies appropriate to their long-term maintenance		implemented.				Wildlife Value Class
							Indicator M46: Road density by Ecosystem & Wildlife Value Class
				1.4.2 Protection of identified sacred and culturally important sites	% of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes	100% of blocks and roads have consultation records and 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.  100% of cutblocks and roads have a Cultural Heritage Resource (CHR) assessment completed and strategies implemented to protect the resource features.	M27: Percentage of forest management commitments completed on time resulting from consultations regarding non-timber features and interests
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	Healthy, productive forests that support ecosystem conditions and process.	Forest ecosystem resilient to disturbances and stresses.	2.1.1 Reforestation success	Average Regeneration delay for stands established annually	Regeneration delay, ≤ 2.5 years	M17: Percent forest in each patch type by patch size class by BEC Variant  M32: Percent Seral Stage Distribution by LRMP Biodiversity Emphasis Area / BEC Combination  M33: Percent Species Composition by BEC

	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	Ecosystem and biological productivity is conserved on the DFA.	Sustainable rates of ecosystem and biological productivity	2.2.1 Additions and deletions to the forest area	Percent of gross forested landbase in the DFA converted to non-forest land use through forest management activities	Gross DFA converted to permanent access  2.2%	M25: Percent of Gross Forest Area converted to permanent access
							M17: Percent forest in each patch type by patch size class by BEC Variant
				2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested	Percent of volume harvested compared to the allocated harvest level	100% over the cut control period as defined by Timber supply forecast harvest flow	M20: Percentage of AAC harvested
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	Productive capacity of soil resources are conserved	Soil quantity and quality are sustained through their characteristic range of variation on the DFA over time	3.1.1 Level of soil disturbance	Percent of harvested blocks meeting soil disturbance objectives identified in plans	100% of blocks meet soil disturbance objectives.	M23: Percentage of Blocks meeting NAR disturbance objectives
							M25: Percent of Gross Forest Area converted to permanent access
				3.1.2 Level of downed woody debris	Percent of cutblocks reviewed where post harvest CWD levels are within the targets contained in Plans	100% of blocks reviewed annually will meet target.	M53: Percent of Harvesting by Licensee Where Recommended Operational Guidelines Have Been Applied to Retain Structural Habitat Elements
	3.2 Water Quality and Quantity Conserve water	Water Quantity	Water quantity and quality are	3.2.1 Proportion of watershed or	Sensitive watersheds that are above Peak	100% of sensitive watershed will have	M45: Equivalent clear cut area (ECA) by

	resources by maintaining water quality and quantity	and Quality	sustained through their characteristic range of variation, on the DFA through time.	water management areas with recent stand-replacing disturbance	Flow targets will have further assessment	further assessments if they are above the peak flow target. The initial peak flow target is 30%.	Sensitive watershed.
							M52: Road density index (RDI) by sensitive watershed
					% of high hazard drainage structures in sensitive watersheds with identified water quality concerns that have mitigation strategies implemented	100% of high hazard drainage structures in sensitive watersheds will have mitigations strategies implemented.	M7: Percentage of Identified High Hazard Structures with Actions Plans Implemented
							M10: Percent of cut blocks harvested that are consistent with riparian management area commitments
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	Storage of carbon in forest ecosystems and products	Forest ecosystems are net carbon sinks over time.	4.1.1 Net carbon uptake	Maintain the retention of existing (or replacement of) old forest retention area	Maintain status for Old Seral Stage distribution (See LRMP Specific management ) –high biodiversity emphasis area and general forested area	M32: Percent Seral Stage Distribution by LRMP Biodiversity Emphasis Area / BEC Combination
							M53: Percent of Harvesting Where Recommended Operational Guidelines Have Been Applied to Retain Structural Habitat Elements
	M57: Ecosystem Carbon Storage by tonnes/ha.						
	<b>4.2 Forest Land Conversion</b> Protect forest lands from deforestation or conversion to non-forests, where ecologically appropriate	Ecosystem and biological productivity is conserved on the DFA.	Sustainable rates of ecosystem and biological productivity	2.2.1 Additions and deletions to the forest area	Percent of gross forested landbase in the DFA converted to non-forest land use through forest management activities	Gross DFA converted to permanent access = 2.2%	M25: Percent of Gross Forest Area converted to permanent access
							M17: Percent forest in each patch type by patch size class by BEC Variant

							M32: Percent Seral Stage Distribution by LRMP Biodiversity Emphasis Area / BEC Combination
							M49: Area Weighted Average Minimum Harvest Age Mean Annual Increment (m3/ha/year) by BEC
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	A balanced supply and variety of timber and non-timber Products, services and benefits on the DFA	A sustainable harvest and use of non-timber forest products services and benefits, A variety of agricultural products are provided from the DFA, A full range of recreation opportunities are provided on the DFA	5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	Percent of volume harvested compared to the allocated harvest level	100% over the cut control period as defined by Timber supply forecast harvest flow	M20: Percentage of AAC harvested
							M21: Ratio of annual mill consumption to AAC apportionment harvested
					Conformance with strategies for non-timber benefits identified in plans	100% conformance for site level plans.	M11: Percent area less than VEG by recreation class
							M12: Percentage of Blocks and Roads Harvested Annually that

							are Consistent with the Visual Quality Objective (VQO)
							M13: Percent area in suitable forage opportunity class by LU
							M19: Percent Seral Stage Distribution by non-timber tenure license by forest licensee
							M27: Percentage of forest management commitments completed on time resulting from consultations regarding non-timber features and interests
							M32: Percent Seral Stage Distribution by LRMP Biodiversity Emphasis Area / BEC Combination
							M35: Percent species composition of harvest volume
							M42: Area of arable land (Ha/5yr.) within contributing and non-contributing forest converted to agricultural lease by agricultural unit in licensee operating area
							M47: Road density by recreation class

							M56: Percent of Fires Burning During Poor or Fair Air Quality Conditions
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	Healthy and sustainable communities	A diverse local economy and local participation in the use and management of forest benefits on the DFA.	5.2.1 Level of investment in initiatives that contribute to community sustainability	Investment in local communities	Percent of dollars spent in local communities; 5-year rolling average. Target will be 45.0% .	M6: Number of Continual Improvement-related projects in the DFA	
						M24: Percentage of Total Goods and Services Provided by Local Vendors	
						M27: Percentage of forest management commitments completed on time resulting from consultations regarding non-timber features and interests	
			5.2.1 Level of investment in initiatives that contribute to community sustainability	Benefits directed into local communities by licensee (Local Indicator).	Amount of benefits directed into local communities; 5-year rolling average. Target will be \$38,000.	M43: Benefits directed into local communities.	
5.2.2 Level of investment in training and skills development	Training in environmental and safety procedures in compliance with company training plans	100% of company employees and contractors will have both environmental and safety training as identified on licensee training plans.  (Variance = -10%)	None				

				5.2.3 Level of direct and indirect employment	Maintain average level of direct and indirect employment	Canfor: = 940,424m <sup>3</sup> * 2.65jobs/1000m <sup>3</sup> = 2492 direct and indirect jobs	M20: Percentage of AAC harvested
				5.2.4 Level of Aboriginal participation in the forest economy	Number of opportunities for Aboriginals to participate in the forest economy	Number of opportunities; three-year rolling average. Canfor: ≥ 5 (Variance = -10%)	M4: Number of Participation Opportunities by Opportunity Type
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 and Treaty Rights	Recognition and respect of aboriginal rights.	6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights	Employees will receive Aboriginal awareness training	100% of employees trained in Aboriginal awareness as outlined in the companies training matrix. (Variance = -10%)	none
				6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans	Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans.	100% of Management Plans.	M2: Number of Communications
				6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing,	Percent of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses	100% compliance with operational plans and corresponding results and strategies. 100% of blocks and roads that have had a CHR assessment completed. 100% of blocks and	M54: Percentage of comments receiving response by type
							M5: Number of Aboriginal Participation Opportunities

				gathering) occur		roads have a completed consultation record.  (0 Variance)	
	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	Protected areas and sites of biological and cultural significance are identified and appropriately managed.	Protected areas identified through government processes are respected and accommodated. Biologically and culturally significant areas are identified and management strategies appropriate to their long term maintenance are implemented.	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	% of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes	100% of blocks and roads have consultation records and 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.  100% of cutblocks and roads have a Cultural Heritage Resource (CHR) assessment completed and strategies implemented to protect the resource features.	M5: Number of Aboriginal Participation Opportunities  M27: Percentage of forest management commitments completed on time resulting from consultations regarding non-timber features and interests
	6.3 Forest Community Well-Being and Resilience Encourage, co-operate with, or help to provide opportunities for economic diversity within the community	Strength and Diversity in the economy	Participate in the local economy by having relationships with forest dependant businesses	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	Primary products, by-products, and services that are bought, sold, traded, or utilized with other forest dependent businesses forest users, and the community in the local area.	10 purchase/sale/trade/service relationships in the local area.  (Variance -20%)	None



		Healthy and sustainable communities	A diverse local economy and local participation in the use and management of forest benefits on the DFA.	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	Implementation and maintenance of certified safety program	Become and maintain Safe certification	None
				6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved	Implementation and maintenance of certified safety program	Become and maintain Safe certification	none
	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	Fair, equitable and effective public participation.	A public involvement process designed, implemented and functioning to the satisfaction of the participants.	6.4.1 Level of participant satisfaction with the public participation process	PAG established and maintained and satisfaction survey implemented according to Terms of Reference	Complete Public Advisory Group evaluation form at end of each meeting, assess results and develop action plans at subsequent meeting when the overall average PAG meeting satisfaction is less than 4.	M50: Public Advisory Group established and maintained according to approved Terms of Reference
				6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general	Numbers of educational opportunities for information and/or training that are delivered to the Public Advisory Group	Licensee All: >= 1	M2: Number of Communications by Licensee  M6: Number of Continual Improvement-related projects in the DFA by licensee

							M54: Percentage of comments receiving response by type
				6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities	Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans.	100% of Management Plans.	M54: Percentage of comments receiving response by type
	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 decision-making and increased knowledge	Relevant information is exchanged between interested parties to support decision-making and increased knowledge of ecosystem processes and interactions with forest ecosystems	6.5.1 Number of people reached through educational outreach	Number of people to whom educational opportunities are provided.	Number of people to whom educational opportunities are provided. Target # of 50. (Variance of -10)	M6: Number of Continual Improvement-related projects in the DFA
						M54: Percentage of comments receiving response by type	
6.5.2 Availability of summary information on issues of concern to the public				SFM monitoring report made available to the public	Annual monitoring report was made publically available on an external website.	none	
				Total	37 proposed indicators		

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## APPENDIX 3 – SPECIES OF MANAGEMENT CONCERN

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### Wildlife Species

Species	SAS Group	BC List	SARA	Species of Management Concern
American Bittern	3w,r	Blue		
Caribou	4	No Status		Y
Fisher	3c	Blue		Y
Grizzly Bear	1	Blue		
Lewis's Woodpecker	4	Red	1-SC (Jun 2003)	Y
Long-billed Curlew	6	Blue	1-SC (Jan 2005)	
Mountain Goat	4	Yellow		Y
Olive-sided Flycatcher	1	Blue	1-T (Feb 2010)	
Peregrine Falcon	4	No Status		Y
Rusty Blackbird	3w,r	Blue	1-SC (Mar 2009)	Y
Short-eared Owl	4	Blue	3 (Mar 2005)	Y
Townsend's Big-eared Bat	6	Blue		

Western Toad	3w,r	Blue	1-SC (Jan 2005)	Y
Wolverine	1	No Status		

### **Plants**

<b>Species</b>	<b>BC List</b>	<b>Bec Zone</b>
alpine lily	Blue	ESSFmc
Back's sedge	Blue	SBSdk
dainty moonwort	Blue	ESSF
diverse-leaved cinquefoil	Blue	ESSF
Montana larkspur	Blue	ESSF
purple oniongrass	Blue	ESSF ,SBSdk
western Jacob's-ladder	Blue	ESSFmv, SBSmc
Whitebark Pine	Blue	ESSFmc, ESSFmv, SBSmc, SBSwk

### **Plant Communities**

<b>Species</b>	<b>Bec units</b>	<b>BC List</b>
black spruce / creeping-snowberry / peat-mosses	SBSdk/09	Blue

lodgepole pine / common juniper / rough-leaved ricegrass	SBSdk/02	Blue
(balsam poplar, black cottonwood) - spruces / red-osier dogwood	SBSdk/08	Red
Douglas-fir / red-stemmed feathermoss - step moss	SBSdk/04	Blue
black spruce / common horsetail / peat-mosses	SBSwk3/08	Blue
black spruce / common horsetail / peat-mosses	SBSwk3/08	Blue
lodgepole pine / black huckleberry / reindeer lichens	SBSwk3/02	Blue
Douglas-fir - hybrid white spruce / thimbleberry	SBSwk3/03	Blue

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

Current as of January 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-REPLACABLE FOREST LICENSE (NRFL) RISK ASSESSMENT

Canfor does not have exclusive rights to harvesting on the DFA. Other license holders 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 licensee volume summary table below provides the amount of volume that could potentially be harvested in the DFA by other operators. The risk ranking matrix below describes how each indicator is or is not impacted by other operators, and exactly what is being reported.

<b>Morice T.S.A. Licensee Volume Summary Table</b>									
<b>Licensee</b>	<b>License</b>	<b>Expiry</b>	<b>Type</b>	<b>AAC</b>	<b>Volume that could be harvested in DFA</b>	<b>Volume managed by SFMP signatories</b>	<b>total volume for non replaceable licenses</b>	<b>Remarks/Risk assessment</b>	<b>Risk to SFMP</b>
Babine Forest Products Ltd.	A16823	31-Dec-2016	Transfer	38,640	38,640		154,560	IFPA cut uplift transferred from Lakes TSA. Canfor has provided BFP with areas they could harvest in to ensure conformance with SFMP. BFP communicates their plans to Canfor. BFP participated in developing the IFPA forestry plan	Low
West Fraser (Houston Forest Products)	A16827	31-Oct-2021	Replaceable	265,336				Have their own operating area in the Morice TSA. Were involved in developing the SFMP. Do not harvest within the DFA. HFP participates in the IFPA forestry plan and developing the original	Nil

								SFMP.	
Canadian Forest Products	A16828	31-Oct-2022	Replaceable	940,424	940,424	940,424		Signatory to the SFM plan.	Nil
Canadian Forest Products	A91846		Replaceable	324,500	324,500	324,500		Signatory to the SFM plan. New license from WF trade.	Nil
BC timber Sales Babine			Timber sales	339,410		0		Have their own operating area in the Morice TSA. Were involved in developing the SFMP. Do not harvest within the DFA. BCTS participates in the IFPA forestry plan and developing the original	Nil
Wet'suwet'en Ventures Ltd.	A71014	31-May-2015	Non-Replaceable	100,000	100,000		500,000	No volume harvested in the DFA to date. No record of performance on this license since it was issued. Still have 3 years to harvest.	Mode rate
Babine Forest Products Ltd.	A83729	31-Dec-2015	Non-Replaceable	43,948	43,948		219,740	No harvest volume harvested in the DFA to date. BFP facility was destroyed Jan 2012. BFP will not likely be able to commence harvest on this license until 2014 if the mill is rebuilt. BFP communicates their harvesting plans with other licensees. BFP	Low

								participated in developing the IFPA forestry plan.	
Lakes Timber Health and Salvage Ltd.	A85565	14-Jul-2019	Non-Replaceable	50,000	50,000		500,000	Bioenergy licenses targeting 75% pine 90% grey less than 214 m3 for the first five years and 264m3 for the second five years. No harvest performance to date.	Low
Northern Engineered Wood Product	A85566	14-Jul-2019	Non-Replaceable	50,000	50,000		500,000	Bioenergy licenses targeting 75% pine 90% grey less than 214 m3 for the first five years and 264m3 for the second five years. No harvest performance to date.	Low
Lowell A Johnson Consultants Ltd.	A90555	1-May-2018	Non-Replaceable	23,827	23,827	23,827	119,135	Managed by Canfor. Harvesting in the DFA on this license follows the SFMP	Nil
Lowell A Johnson Consultants Ltd.	A87918	4-Jan-2013	Non-Replaceable	41,126	41,126	41,126		Managed by Canfor. Harvesting in the DFA on this license follows the SFMP	Nil
Lake Babine Nation	A88866	31-Dec-2016	Non-Replaceable	14,096	14,096		70,480	No harvest performance to date and a very small amount of volume	Low



West Fraser	A16826	31-Dec-2016	Transfer	29,640			118,560	Being cut in HFP's operating area and outside the DFA. Fraser Lake Sawmills participates in the IFPA Forestry Plan and help develop the SFMP.	Nil
Skin Tye	A83847	31-Jan-2013	Transfer	53,500	53,500		267,500	No harvest performance ot date in the Morice TSA. Tranfer expires in a year.	Low
Wet'suwe t'en First Nation 0639881 B.C. LTD.	A72921	31-Aug-2015	Transfer	120,000	120,000	120,000	250,000	Agreement signed between Wet'suwet'en and Canfor.	Nil
	Total volume			2,434,447	1,800,061	1,449,877	2,699,975		
	Pct of volume that could be harvested in DFA managede by SFMP signatories					80.5%			
	Volume that could be harvested in DFA assessed as low risk					250,184			
	Pct of volume that is low risk to the DFA					13.9%			
	Volume that could be harvested assessed as moderate risk					100,000			
	Pct of volume that is moderate risk to the DFA					5.6%			

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	Percent representation of ecosystem groups across the DFA	Rare ecosystems groups as identified in the previous table will not be harvested.	a
1.1.2	Percent distribution of forest type (treed conifer, treed broad leaf, treed mixed) >20 years old across the DFA	Target percentages for Percent distribution of forest type (coniferous, broadleaf, mixed) >20 years old across the DFA (as per the Table in the SFM Plan.	a
1.1.3	Percent late seral distribution by ecological unit across the DFA.	Percent late seral (old) distribution by ecological unit as shown in the table	b
1.1.4(a)	Percent of stand structure retained across the DFA in harvested areas	Landscape level of target 7%.	b
1.1.4(b)	Percent of blocks meeting dispersed retention levels as prescribed in the site plan/logging plan	100%	b
1.1.4(c)	Number of non-conformance where forest operations are not consistent with riparian management requirements as identified in operational plans	0	b

Indicator #	Indicator Statement	Target	Risk Rank Ref
1.1.5	Percent forest in each patch type by patch size class by BEC variant by licensee.	Trending toward early seral patch targets as shown in the table	a
1.2.1	Percent of forest management activities consistent with management strategies for Species of Management Concern.	100% conformance with management strategies	b
1.2.3	Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use	100% conformance with Chief Forester's Standards for seed use.	b
1.3.1	(Duplicate) Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use	100% conformance with Chief Forester's Standards for seed use.	b
1.4.1	Percent of forest management activities consistent with management strategies for protected areas and sites of biological significance	100% conformance with management strategies	b
1.4.2	Percent of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes	100% of blocks and roads have consultation records and there is a record of the Aboriginals involved, the comments received, the level of consultation carried out, and any adjustment to strategies or accomodation made as a result of this consultation. 100% of cutblocks and roads have a Cultural Heritage Resource (CHR) assessment completed and strategies implemented to protect the resource features.	b
2.1.1(a)	Average Regeneration delay for stands established annually	Regeneration delay achieved in $\leq 2.5$ years	b
2.2.1	Percent of gross forested land base in the DFA converted to non-forest land use through forest management activities	The target = 2.2%	a
2.2.2	Percent of volume harvested compared to the allocated harvest level	100% over the cut control period as defined by timber supply forecast harvest flow	c
3.1.1	Percent of harvested blocks meeting soil disturbance objectives identified in plans	100% of blocks meet soil disturbance objectives	b

Indicator #	Indicator Statement	Target	Risk Rank Ref
3.1.2	Percent of cutblocks reviewed where post harvest CWD levels are within the targets contained in Plans	100% of blocks reviewed annually will meet target.	b
3.2.1(a)	Sensitive watersheds that are above Peak Flow targets will have further assessment	100% of sensitive watershed will have further assessments if they are above the peak flow target. The initial peak flow target is 30%.	a
3.2.1(b)	% of high hazard drainage structures in sensitive watersheds with identified water quality concerns that have mitigation strategies implemented	100% of high hazard drainage structures in sensitive watersheds will have mitigations strategies implemented.	c
4.1.1	(Duplicate) Maintain the retention of existing (or replacement of) old forest retention area.	Percent late seral (old) distribution by ecological unit as shown in the table	b
4.2.1	(Duplicate) Percent of gross forested landbase in the DFA converted to non-forest land use through forest management activities	The target will be 2.2%	a
5.1.1(a)	(Duplicate) Percent of volume harvested compared to the allocated harvest level	100% over the cut control period as defined by timber supply forecast harvest flow	c
5.1.1(b)	Conformance with strategies for non-timber benefits identified in Plans.	100%	b
5.2.1(a)	Investment in local communities	Percent of dollars spent in local communities; 5-year rolling average. Target will be 45.0%	c
5.2.1(b)	Benefits directed into local communities by licensee	Amount of benefits directed into local communities; 5-year rolling average. Target will be \$38,000.	c
5.2.2	Training in environmental and safety procedures in compliance with company training plans	100% of company employees and contractors will have both environmental and safety training as identified on licensee training plans.	c
5.2.3	Maintain average level of direct and indirect employment	$940,424\text{m}^3 * 2.65\text{jobs}/1000\text{m}^3$ 2492 direct and indirect jobs	c
5.2.4	# of opportunities for Aboriginals to participate in the forest economy	Number of opportunities; three-year rolling average $\geq 5$	c
6.1.1	Employees will receive Aboriginal awareness training	100% of employees trained in Aboriginal awareness as outlined in the companies training matrix.	c

Indicator #	Indicator Statement	Target	Risk Rank Ref
6.1.2	Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans	100% of management plans	C
6.1.3(a)	Percent of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses	100% compliance with operational plans and corresponding results and strategies. 100% of blocks and roads that have had a CHR assessment completed. 100% of blocks and roads have a completed consultation record	C
6.2.1	(Duplicate) Percent of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes	100% of blocks and roads have consultation records and 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.  100% of cutblocks and roads have a Cultural Heritage Resource (CHR) assessment completed and strategies implemented to protect the resource features.	C
6.3.1	Primary products, by-products, and services that are bought, sold, traded, or utilized with other forest dependent businesses forest users, and the community in the local area.	≥ 13 relationships	C
6.3.2	Implementation and maintenance of certified safety program	100%	C
6.4.1	PAG established and maintained and satisfaction survey implemented according to Terms of Reference	Complete Public Advisory Group evaluation form at end of each meeting, assess results and develop action plans at subsequent meeting when the overall average PAG meeting satisfaction is less than 4.	C
6.4.2	Numbers of educational opportunities for information and/or training that are delivered to the Public Advisory Group	≥ 1	C
6.4.3	(Duplicate) Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans	100% of management plans	C
6.5.1	Number of people to whom educational opportunities are provided.	50	C
6.5.2	SFM monitoring report made available to the public	SFM monitoring report available to public annually via an external website	C

## APPENDIX 5 – FORECASTING TABLES

TSA_NA'	SFM_CA'	GROUP	LU_NAME	GROUP	SUBGRD	TOTAL_F	NP	CURRENT_YOUNG	CURRENT_MID	CURRENT_MA'	CURRENT_OLD	total	Percent	FUTURE5_YOI	FUTURE5	FUTURE5_I	FUTURE5_OLD
Morice T&S DFA - Car BEC/ILU	Buck	ESSFmc	28,254	2,746		4,252	2,647	17,835	775	25,509	3.04%	4,971	2,637	16,805	761		
Morice T&S DFA - Car BEC/ILU	Buck	SBSdk	21,249	5,450		4,559	2,811	1,472	4,338	13,180	32.91%	4,785	3,212	1,126	4,053		
Morice T&S DFA - Car BEC/ILU	Buck	SBSmc2	27,706	3,939		8,850	3,924	1,779	9,211	23,764	38.76%	8,213	3,684	1,650	9,199		
Morice T&S DFA - Car BEC/ILU	Burnie	ESSFmcp	802	718				57	27	84	31.74%			57	27		
Morice T&S DFA - Car BEC/ILU	Burnie	ESSFmk	21,056	7,345	41	202	1,251	12,216	13,711	89.10%	5	197	1,256	12,251			
Morice T&S DFA - Car BEC/ILU	Burnie	ESSFmkp	5,534	2,613			593	2,328	2,920	79.70%			593	2,328			
Morice T&S DFA - Car BEC/ILU	Fulton	ESSFmc	13,833	1,528	569	2,088	6,227	3,410	12,294	27.74%	1,760	1,608	5,957	2,854			
Morice T&S DFA - Car BEC/ILU	Fulton	ESSFmcp	899	572			283	44	327	13.31%	144		245	23			
Morice T&S DFA - Car BEC/ILU	Fulton	SBSmc2	84,588	14,428	22,908	14,169	11,334	21,747	70,159	31.00%	21,972	14,936	9,968	21,981			
Morice T&S DFA - Car BEC/ILU	Gosnel	ESSFmc	17,662	2,774	2,526	6,589	5,774	14,888	38.78%	1,457		7,092	5,841				
Morice T&S DFA - Car BEC/ILU	Gosnel	ESSFmcp	5,350	4,553		2	360	435	797	54.59%		2	360	435			
Morice T&S DFA - Car BEC/ILU	Gosnel	ESSFmk	3,575	394	491	16	973	1,702	3,181	53.50%	0	16	1,051	2,051			
Morice T&S DFA - Car BEC/ILU	Gosnel	ESSFmkp	759	107	0		651	651	99.97%				651				
Morice T&S DFA - Car BEC/ILU	Gosnel	SBSmc2	18,000	2,037	4,745	50	3,552	7,614	15,962	47.70%	2,754	50	3,550	7,919			
Morice T&S DFA - Car BEC/ILU	Granisle	ESSFmc	1,648	107	1	714	827	1,542	0.00%	91	692	761					
Morice T&S DFA - Car BEC/ILU	Granisle	SBSmc2	17,452	2,344	5,147	2,381	3,351	4,226	15,105	27.98%	4,347	2,819	3,210	4,488			
Morice T&S DFA - Car BEC/ILU	Houston -	ESSFmc	12,555	586	85	147	6,926	4,810	11,969	40.19%	30	150	6,979	4,807			
Morice T&S DFA - Car BEC/ILU	Houston -	ESSFmcp	8,946	6,935		48	1,623	340	2,011	16.89%		48	1,623	340			
Morice T&S DFA - Car BEC/ILU	Houston -	SBSdk	7,832	861	2,836	1,051	1,690	1,109	6,685	16.58%	2,931	1,018	1,496	1,233			
Morice T&S DFA - Car BEC/ILU	Houston -	SBSmc2	23,275	2,306	7,707	2,175	2,984	8,104	20,969	38.65%	4,563	2,179	3,585	9,308			
Morice T&S DFA - Car BEC/ILU	Kidprice	ESSFmc	14,632	1,031	1,626	1,746	8,456	1,774	13,601	13.04%	1,185	1,746	8,541	1,851			
Morice T&S DFA - Car BEC/ILU	Kidprice	ESSFmcp	1,478	1,238			183	57	241	23.77%			183	57			
Morice T&S DFA - Car BEC/ILU	Kidprice	ESSFmk	17,439	3,185	68	4,983	5,672	3,531	14,254	24.77%	44	4,983	5,696	3,531			
Morice T&S DFA - Car BEC/ILU	Kidprice	ESSFmkp	365	51			234	81	315	25.77%			234	81			
Morice T&S DFA - Car BEC/ILU	Kidprice	SBSmc2	52,487	7,257	21,327	3,886	3,043	16,975	45,230	37.53%	15,943	5,125	2,923	18,988			
Morice T&S DFA - Car BEC/ILU	Morice La	CvHws2	15,402	7,894	8		69	7,432	7,509	98.98%		8	58	7,443			
Morice T&S DFA - Car BEC/ILU	Morice La	ESSFmc	2,597	306	33		1,709	549	2,292	23.96%	23		1,710	551			
Morice T&S DFA - Car BEC/ILU	Morice La	ESSFmk	20,875	8,917		27	1,948	9,982	11,957	83.48%		27	1,948	9,982			
Morice T&S DFA - Car BEC/ILU	Morice La	ESSFmkp	16,001	15,823			179	179	100.00%				179				
Morice T&S DFA - Car BEC/ILU	Morice La	SBSmc2	10,240	4,403	1,383		427	4,026	5,837	68.98%	1,287		390	3,949			
Morice T&S DFA - Car BEC/ILU	Morrison	ESSFmc	3,575	441	8	630	2,271	225	3,134	7.17%	0	309	2,600	225			
Morice T&S DFA - Car BEC/ILU	Morrison	ESSFmv3	4,751	462		643	3,614	32	4,289	0.75%			556	3,701	32		
Morice T&S DFA - Car BEC/ILU	Morrison	SBSmc2	76,533	15,788	11,413	9,828	11,798	27,523	60,562	45.45%	13,104	9,227	9,600	28,791			
Morice T&S DFA - Car BEC/ILU	Nadina	ESSFmc	28,107	2,303	1,695	3,112	19,555	1,442	25,803	5.59%	2,868	3,095	18,395	1,438			
Morice T&S DFA - Car BEC/ILU	Nadina	ESSFmcp	2,103	1,841		1	260		262	0.00%			1	260			
Morice T&S DFA - Car BEC/ILU	Nadina	SBSdk	17,576	2,775	6,600	4,332	569	3,088	14,588	21.16%	6,671	4,117	593	3,118			
Morice T&S DFA - Car BEC/ILU	Nadina	SBSmc2	65,255	9,336	22,537	3,822	10,114	19,423	55,895	34.75%	26,492	3,509	8,665	17,396			
Morice T&S DFA - Car BEC/ILU	Nanika	CvHws2	5,429	3,142		66	264	1,957	2,287	85.58%		66	264	1,957			
Morice T&S DFA - Car BEC/ILU	Nanika	ESSFmk	14,254	6,764		82	3,662	3,747	7,490	50.02%		82	3,662	3,747			
Morice T&S DFA - Car BEC/ILU	Nanika	ESSFmkp	1,385	1,325			57	4	60	5.82%			57	4			
Morice T&S DFA - Car BEC/ILU	Nanika	MHm2	915	907			9	9	100.00%				9				
Morice T&S DFA - Car BEC/ILU	North Bat	ESSFmv3	5,051	244	673		4,025	110	4,807	2.28%	338	3	4,144	110			
Morice T&S DFA - Car BEC/ILU	North Bat	SBSdk	160	6	7		9	138	154	89.43%		3	9	142			
Morice T&S DFA - Car BEC/ILU	North Bat	SBSmc2	64,923	31,098	13,720	1,501	5,105	13,437	33,763	39.80%	9,056	3,025	4,781	15,222			
Morice T&S DFA - Car BEC/ILU	Owen	ESSFmc	6,636	391	497	448	4,585	716	6,245	11.46%	531	424	4,575	716			
Morice T&S DFA - Car BEC/ILU	Owen	SBSdk	18,869	4,283	4,633	2,199	2,344	3,871	13,046	29.67%	4,704	2,060	2,341	3,819			
Morice T&S DFA - Car BEC/ILU	Owen	SBSmc2	21,277	2,261	6,982	2,295	2,028	7,608	18,913	40.23%	6,738	2,256	2,186	7,409			
Morice T&S DFA - Car BEC/ILU	Parrott	ESSFmc	3,686	133	1,240	73	2,106	134	3,554	3.78%	1,158	47	2,182	135			
Morice T&S DFA - Car BEC/ILU	Parrott	ESSFmcp	97	42	25		30		55	0.00%		25	30				
Morice T&S DFA - Car BEC/ILU	Parrott	SBSdk	15,927	2,634	4,437	2,860	1,312	3,416	12,024	28.41%	4,106	2,481	884	3,660			
Morice T&S DFA - Car BEC/ILU	Parrott	SBSmc2	27,414	4,384	11,417	3,276	1,334	5,542	21,568	25.69%	8,024	3,643	1,296	6,077			

