CANFOR QUESNEL DEFINED FOREST AREA
SUSTAINABLE FOREST MANAGEMENT PLAN

June 2012

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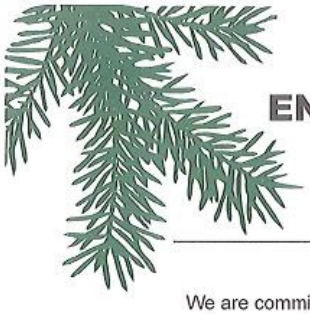
COMMITMENTS TO SUSTAINABLE FOREST MANAGEMENT

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 Quesnel Defined Forest Area (DFA). These commitments are available and communicated publicly.



ENVIRONMENT POLICY

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.

Don Kayne
President and Chief Executive Officer

Ronald L. Cliff
Chairman

May 2011

CANFOR

Canadian Forest Products

Sustainable Forest Management Commitments - May 2012

Sustainable Forest Management

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

Accountability

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

Adaptive Management

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

Science

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

Multiple Value Management

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

Health and Safety

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

Aboriginal Peoples

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

100 – 1700 West 75th Avenue, Vancouver, British Columbia, Canada V6P 6G2
Telephone 604-661-5241 Fax 604-661-5235 info@canfor.ca www.canfor.com

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.

Don Kayne

President and Chief Executive Officer

May 2012

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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 *NCSFA* Public Advisory Group

Susan Joyce – Canfor Quality Scaler

Dan Broderick – Senior High School Teacher

Robert Stoldt – Secondary Wood Manufacturing)

Canfor Forest Management Group

Jon Erickson – Forestry Supervisor

Peter Baird – Planning Manager

Facilitator& Support

Gail Wallin – Management Plus Communications Ltd

SIGNATORIES

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

June 1, 2012

Jon Erickson, R.P.F., Forestry Supervisor Planning, Date

Canadian Forest Products Ltd.
Forest Management Group

June 1, 2012

Peter Baird, RPF. Planning Manager Date

Canadian Forest Products Ltd.
Forest Management Group

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EXECUTIVE SUMMARY

Between 2004 and 2005 Canfor along with a group of public and First Nation representatives (the North Cariboo Sustainable Forest Advisors (NCSFA)), developed a Sustainable Forest Management Plan (SFMP) for the Canfor Quesnel Defined Forest Area (DFA).

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

The SFMP includes a set of values, objectives, indicators and targets that address environmental, economic and social aspects of forest management in the Quesnel 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 NCSFA, 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 NCSFA to address changes in forest conditions and local community values. Each year the NCSFA reviews an annual report prepared by Canfor to assess achievement of indicators and targets. This monitoring process provides Canfor, the public and First Nations an opportunity to bring forward new information, and to provide input concerning new or changing public values that can be incorporated into future updates of the 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 Quesnel DFA process, including the SFM Plan, and can be viewed at:

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

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1.0 INTRODUCTION & OVERVIEW

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

The Canadian Standards Association (CSA) Sustainable Forest Management is one of a number of certification systems currently being used in British Columbia. A Sustainable Forest Management Plan (SFMP) developed according to the CSA standard, sets performance objectives and targets over a defined forest area (DFA) to reflect local and regional interests. This standard requires that SFMP development, maintenance and improvement include significant public involvement. Public Advisory Groups (PAGs) such as the NCSFA, composed of a cross-section of local interests, including commercial and non-commercial recreation, tourism, ranching, forest contactors, conservation, mining, communities, small business, and First Nations, fulfill this role.

Canfor and the NCSFA have developed, maintained and improved, the Canfor Quesnel DFA SFMP based on the CSA Z809 standard.[1] This most recent SFMP revision reflects the latest CSA Z809-08 standard. The plan was written with the opportunity to provide input into management for Canfor Quesnel's DFA.

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 Cariboo-Chilcotin Land Use Plan (CCLUP) 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 Canfor 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 NCSFA, to reflect changes in forest condition and local community values.

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

[1] Reference: http://www.shopcsa.ca/onlinestore/GetCatalogItemDetails.asp?mat=2419617

2.0 THE DEFINED FOREST AREA

2.1 Area Description[2]

2.1.1 Overview

The Canfor Quesnel DFA (refer to map on the following page) is contained wholly in Canfor's planning cells situated in portions of the Quesnel TSA west of the Fraser River. The DFA area is 378,348 hectares and is covered by the planning area for replaceable Forest Licence A20011.

2.1.2 Communities

The major population center in the DFA is the City of Quesnel with a population of 10,007 (2011). The small communities of Bouchie Lake, Baker Creek and Nazko are situated west of Quesnel.

The Nazko Band (Ndazkhot'en), Kluskus Band (Lhoosk'us Dene), Red Bluff Band (Lahtako), Soda Creek Band (Xats'ull), Alexandria Band (Esdilagh), Alexis Creek (Tsi Del Del) and Anaham (Tl'etinqox-t'in) each have Traditional Areas that overlap the DFA.

2.1.3 Area Economy

The economy of the Quesnel area is mainly forestry dependant. Forestry accounts for more than 40 per cent of the timber supply area's direct total employment. Other major sectors in the area are the public sector, tourism, agriculture and mining.

While the majority of mining in the Quesnel area happens outside of the DFA, in areas east of the Fraser River, there is a small amount of mining activity in areas in and around the DFA. This consists mainly of rock and gravel quarries, volcanic rock and gold. Ongoing exploration for metals, oil and gas also occur.

The grasslands and open forests in the area provide forage for a beef cattle ranching industry. These operations are highly dependent on public rangelands to meet their forage requirements.

2.1.4 Environment

The Canfor Quesnel DFA is located in the northern part of the Southern Interior Forest Region, lying in the Fraser Basin and the Interior Plateau between the Coast Mountains on the west and the Cariboo Mountains on the east. To the west of Quesnel lie the Itcha-Ilgachuz mountain ranges and the intervening gently rolling terrain encompassing the Blackwater and Nazko river systems. The DFA has a relatively dry climate with forests dominated by lodgepole pine.

Overall, the DFA is covered by stands of lodgepole pine (85 percent by area), spruce (10 percent), and Douglas-fir (3 percent). The Biogeoclimatic Ecosystem Classification (BEC) zones present in the TSA (in descending order by total area in the TSA) are sub-boreal pine-spruce; sub-boreal spruce; montane spruce; Engelmann spruce-subalpine fir; interior Douglas-fir.

Parks, recreation sites and trails, and roaded and non-roaded areas provide opportunities for an assortment of outdoor experiences in the timber supply area. Two large provincial parks

[2] Description is primarily excerpts from "Quesnel TSA Timber Supply Analysis Public Discussion Paper, March 2010".

(Tweedsmuir and Bowron) and other smaller provincial parks, as well as 22 Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) recreation sites and various recreation trails, are located in the timber supply area. The Alexander Mackenzie Trail (also known as the Carrier Nuxalk Grease Trail), a designated heritage trail, traverses the western half of the timber supply area. The Wells-Barkerville area in the eastern half of the timber supply area is well known for an extensive mining history.

A wide variety of wildlife species inhabit the Canfor DFA within the Quesnel Timber Supply Area because of its diverse soils, climate and topography. Several features within the timber supply area are provincially significant. The Blackwater River has a unique, wild strain of rainbow trout and is a popular fishing destination. Many of the streams in the area have either critical or moderate value as fisheries spawning and rearing habitat. Two provincially significant caribou herds are located in the Itcha-Ilgachuz Mountains and the Quesnel Highlands. Other species include mule deer, cougar, moose, black bear, grizzly bear, coyote, wolves and other fur-bearing mammals. The wide range of wildlife in the area provides the basis for wildlife viewing, guided hunting and fishing, trapping and other economic activities. A report undertaken in 2003 for Slocan's Quesnel division listed the terrestrial vertebrates and recommended species indicators for the Canfor DFA within the Quesnel Timber Supply 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

The Canfor DFA within the Quesnel Timber Supply Area overlaps the range of a provincially important and viable herd of Mountain Caribou. Mountain Caribou require sufficient canopy cover, provided by mature forests, to move between feeding areas, and especially in the winter. Movement corridors require attention during planning of forest development activities. There is currently a management strategy in place for the northern Caribou, which lies outside the DFA. In late 2007 the Province of B.C. announced a recovery plan for Mountain Caribou populations. This is a 5-part plan involving the following components:

- Habitat Management
- Recreation - Public Snowmobiling
- Recreation – Commercial Tenures
- Predator/Prey Control
- Population Augmentation

More information on the Mountain Caribou Management Plan can be found on the Ministry of Environment Ecosystems Branch website:

http://www.env.gov.bc.ca/wld/recoveryplans/rcvry1.htm

Indicators 1.2.1 and 1.2.2 of this SFM Plan include indicators and targets related to Species at Risk habitats.

2.1.6 Forest Use

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

Extensive grassland and forested areas provide important forage for both livestock and wildlife. Ranching continues to play an important role in the TSA. The range program in the TSA is the second largest in the province and has a significant impact on the local economy.

Parks, recreation areas and other Crown lands provide the setting for a host of activities including camping, hiking, wildlife and scenic viewing, fishing, hunting, hang-gliding, boating, river rafting, mountain-biking, four-wheel driving, ATV use, snowmobiling, and downhill, and back-country skiing. Major highways pass through areas of exceptional natural scenery, providing easy access to provincial parks, such as Bowron Lakes and Tweedsmuir.

2.1.7 Forest Landbase

The Quesnel DFA covers about 312,000 hectares in total, of which approximately 91 percent—285,000 hectares—is forest management land base (FMLB). About 38,000 hectares of the FMLB area in Canfor's Quesnel DFA is 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 79 percent of the DFA, or 80 percent of the total DFA area, is included in the current timber harvesting land base. A detailed area net down for the Canfor DFA is found in Table 1.

Table 1: Area net down for Canfor DFA

Area summary Of Canfor's Quesnel DFA												
Licensse Operating area	Net down categories											
	Excluded	Non-Forest	Park	Wildlife	Riparian	OGMA	VQO	Phys Inop	Economic	THLB[1]	Forested[2]	Total area
Canfor DFA	**5,154.5**	**27,059.7**	**476.3**	**0.0**	**4,805.6**	**16,797.6**	**21.1**	**0.0**	**10,733.7**	**246,845.4**	**284,834.2**	**311,893.9**
Pct of area	1.7%	8.7%	0.2%	0.0%	1.5%	5.4%	0.0%	0.0%	3.4%	79.1%	91.3%	100.0%
1 - Timber harvesting Landbase												
2 - exludes non-forest area												
Data for table provied from Ecosystem Representation Analysis Report Dec 2011 Forest Ecosystems Solutions Ltd.												

2.2 Mountain Pine Beetle

2.2.1 Overview

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

- Quesnel TSA – MFR Rationale for Allowable Annual Cut Determination. 2011.
- Quesnel TSA – MFR Timber Supply Review Public Discussion Paper. 2010.
- Beetle Facts, MFR website: http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/facts.htm.
- Forest Health Strategy - Quesnel TSA May 2010 http://www.for.gov.bc.ca/dqu/Forest%20Health%20Strategy.htm

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. Area Affected[3]

Eighty-five percent of the area in the TSA has stands of lodgepole pine (Pl). By 2009, approximately 68 percent of the forest inventory available for harvesting in the Quesnel TSA had been killed by the mountain pine beetle epidemic.

The current year (2011) conditions can be summarized as follows:

- Beetle populations have collapsed over nearly all areas of the District.
- New red attack, the majority of which was trace or light, was limited to a few areas near the upper Baezaeko River and Tundra Mountain.
- A few pine plantations near Pantage Creek sustained trace levels of new attack. Attack in the Quesnel District fell from 235,257 ha last year to 6,823 ha.

2.2.2 Strategy & Response

Management strategies have assisted in securing the maximum value in pine forests that have been killed or threatened by the beetle. To this point in time most of the harvest has been concentrated on higher value stands for the recovery of saw logs. However, this aggressive strategy has led to large harvest areas within even larger areas of natural disturbance caused by the beetle.

Landscape level retention strategies have been developed for the Quesnel Forest District[4]. The strategies are intended to support the goal of increasing stand level retention by providing guidance to assist field practitioners in selecting and distributing conservation legacy areas (CLA) during the implementation of the large-scale salvage of MPB impacted pine leading stands within the Quesnel Forest District. The best management practice (BMP) recommendations presented are considered to be the best non-legal direction to realize the objectives and expectations expressed in the Expedited Timber Supply Review for the Quesnel Timber Supply Area, while remaining consistent with the objectives and expectations of the Cariboo Chilcotin Land Use Plan (CCLUP).

Areas of higher potential biological diversity also need to be identified and reserved as necessary from future salvage operations looking to recover value from dead lodgepole pine.

The Quesnel TSA Forest Health Strategy has been developed to provide guidance for harvesting of lodgepole pine (Pl) stands susceptible to MPB attack. This document is updated annually.

2.2.3 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

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[3] Description is primarily excerpts from "Quesnel Timber Supply Area Forest Health Strategy 2011-2012".

[4]Reference: http://www.for.gov.bc.ca/dqu/policies/DQU%20Enhanced%20Conservation%20Strategy-%20Release%201.pdf".

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 (2011).

2.2.4 Summary of the Chief Forester's AAC Determination for the Quesnel TSA

A timber harvest level that accommodates objectives for all forest resources during the next 10 years and that reflects current management practices as well as the socio-economic objectives of the Crown, can be best achieved in the TSA by establishing an AAC of 4 000 000 cubic metres, of which a maximum of 650 000 cubic metres can be attributable to non-pine coniferous tree species volume.

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

2.2.6 Environmental Impacts of the Beetle Infestation

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

2.2.7 Outlook

As of 2011, beetle populations have collapsed over nearly all areas of the District. Canfor has focused harvesting on MPB-impacted pine-leading stands. As the quality and accessibility of the pine available for salvage decreases there is an increasing risk that short-term harvesting could shift to non-pine leading stands. The Chief Forester's AAC Determination for the Quesnel TSA (2011) indicated that short-term conservation of non-pine volume has a dramatic ability to mitigate the projected decrease in mid-term timber supply. As such, the Chief Forester has established a partition harvest of non-pine volume in the AAC to ensure that the current focus on salvaging MPB-impacted pine continues and that non-pine volume is conserved, until such time as the salvage of MPB-impacted pine is no longer economically-viable and the regenerating pine stands have not yet reached minimum merchantability criteria.

2.3 Other Major Factors at Play in the DFA

CCLUP and the LUOR

The Government of British Columbia announced the Cariboo-Chilcotin Land Use Plan (CCLUP) on October 24, 1994. The CCLUP addresses the long-term balance of environment and economy in the region.

The CCLUP was designated as a higher level plan in 1995 under the Forest Practices Code of British Columbia Act. It was later amended in 1999.

With replacement of the Forest Practices Code by the Forest and Range Practices Act, key values have been declared under the Land Use Objectives Regulation which sets legal direction for forestry activities under FRPA with respect to key resource values. The order contains objectives and maps for a number of important resources including, biodiversity, old growth, critical habitat for fish, community areas of special concern, lakes, riparian, mature birch retention, grasslands, scenic areas, trails, high value wetlands for moose and grizzly.

Timber Supply

In response to the Mountain Pine Beetle salvage effort, the government issued a number of non-Replaceable Forest Licenses (NRFL). While many of these licenses were intended to salvage non-sawlog forest types, there were many licenses that did not restrict harvesting to these types. As a result, many of the NRFL holders concentrated salvage harvesting in the same stand types as the major sawmilling licensees, due in part to the tough economic conditions of the past several years. This has resulted in very concentrated pressure on the remaining dead pine in the profile that the mill requires. Further, these NRFL's allowed harvesting anywhere on the TSA, including Canfor's DFA. This has resulted in a very acute issue of future timber supply for Canfor in the DFA / TSA. While the latest Timber Supply Review (TSR 4) has shown a continued abundance of dead pine, the majority of this volume is not the profile required for sawlog production, or it is located in an area that is not currently economically feasible to access. Improved market conditions, would result in increased opportunity to access this wood. Once the salvage period has passed, the annual allowable cut of green live timber will be substantially lower than the current harvest levels. This will place a much greater need to source fibre through private purchase, BCTS and other sources as they become available to maintain the supply of wood that the Quesnel sawmill requires.

2.4 Licensee Operating Areas

The current mountain pine beetle infestation is focusing all forest management planning and harvesting activities. The size of the epidemic has caused the BC Government to increase the Allowable Annual Cut (AAC) for the Quesnel Timber Supply Area (TSA) from the traditional harvest level of 3.2 million cubic meters to 4.0 million cubic metres. The mountain pine beetle epidemic will have 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.

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. 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 Quesnel will attempt to communicate their SFM commitments to all known licensees prior to the commencement of operations in the DFA.

3.0 THE PLANNING PROCESS

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.[5]

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 First Nations (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, complementary 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

[5] In the case of the SFMP for the Canfor Quesnel DFA, this includes compliance with the strategic direction provided in the Cariboo-Chilcotin Land Use Plan (CCLUP).

participation process. Also new are the requirements for the SFMP to contain core indicators for nearly all of the elements.

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 Canfor Quesnel 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 NCSFA 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 NCSFA 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 Canfor Quesnel SFM Planning Process

The SFMP was developed by Canfor based on advice and recommendations provided by the NCSFA. 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 Cariboo-Chilcotin Land Use Plan (CCLUP). 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

Canfor does not have exclusive harvesting rights on the DFA. Other license holders have the right to harvest on the DFA without the consent of Canfor. The short term non-replaceable forest licenses that have been issued to address the salvage of mountain pine beetle killed timber, have resulted in numerous small companies harvesting over the landscape. However, many of these licenses have not been performed on, and the actual impact of their presence is substantially less than if all of the licenses were harvested.

To address the impact that other licensees may potentially have on achieving the targets Canfor has developed a risk-ranking Matrix (Appendix 4) to display the estimated impact of these operations, and provide confidence that the reporting is consistent with reality of operations on the DFA.

3.2.2 Public Participation

The NCSFA 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 NCSFA 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 NCSFA 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.

4.0 STRATEGY GUIDING THE SFMP

4.1 Cariboo-Chilcotin Land Use Plan (CCLUP) [6]

The Government of British Columbia announced the Cariboo-Chilcotin Land Use Plan (CCLUP) on October 24, 1994[7]. The CCLUP 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 Cariboo-Chilcotin. The stability and security provided by the plan provides economic and social stability and increased opportunities for growth and investment throughout the region.

The CCLUP was designated as a higher level plan in 1995 under the Forest Practices Code of British Columbia Act. It was later amended in 1999. The CCLUP guided the application of the Forest Practices Code and other resource management activities within the plan area. The Forest Practices Code was subsequently replaced with the Forest and Range Practices Act (FRPA) but the CCLUP higher level plan was retained under this new legislation.

A land use order has been declared by ILMB under the Land Use Objectives Regulation which sets legal direction for forestry activities under FRPA with respect to key resource values. The order contains objectives and maps for a number of important resources including, biodiversity, old growth, critical habitat for fish, community areas of special concern, lakes, riparian, mature birch retention, grasslands, scenic areas, trails, high value wetlands for moose and grizzly. New Forest Stewardship Plans (FSPs) must comply with the order immediately. Holders of existing FSPs must amend their plans within two years of declaration of the land use order. Copies of the order and all relevant maps are available at:

ftp://ftp.geobc.gov.bc.ca/publish/Regional/WilliamsLake/Cariboo-Chilcotin_LUOR_Order.

4.2 SFMP Strategy for the DFA

The Canfor Quesnel SFMP is aligned with the CCLUP strategic direction. The SFMP strategy recognizes that the CCLUP Goals, Objectives and Strategies support achievement of sustainable forest management in the DFA. The SFMP strategy is to choose appropriate indicators to confirm forest management practices are aligned with the CCLUP Goals and Objectives, and that there is appropriate communication with and consideration for First Nations, public and integrated resource management interests. The SFMP, guided by the CCLUP, utilizes indicators and targets that:

- reflect key goals, objectives and direction of the CCLUP;
- 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.

A set of strategies has been developed to achieve the SFMP objectives and targets. These strategies document the relevance of the indicator to the SFMP and sustainability, and summarize actions required to meet the target. Applicable strategies are documented by indicators in Section 5.7 of the SFMP.

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[6] Refer to Sec 6.1 for information on how the Cariboo-Chilcotin Land Use Plan (CCLUP) guides this SFM Plan.

[7] Reference: http://ilmbwww.gov.bc.ca/slrp/lrmp/williamslake/cariboo_chilcotin/index.html .

4.3 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.

5.0 INDICATORS & INDICATOR MATRICES

The NCSFA 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 Canfor Quesnel 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 its annual monitoring activities.

5.1 Objectives, Indicators & Targets

The Canfor Quesnel 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 Canfor website.
http://canfor.comhttp://www.canfor.com/responsibility/environmental/certification/sustainability/certification/csa.asp.

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.

Forecasting of many of the SFMP indicators and targets has occurred either indirectly or directly at the provincial or regional level. The provincial government, in order to facilitate implementation of the CCLUP Biodiversity Strategy, provides periodic analyses of seral stage distribution and patch size for each landscape unit/BEC unit combination in the Cariboo-Chilcotin. SFMP development has built in this information, often within the indicator and target itself. A strong example of this is the desired outcomes of the CCLUP and SFM Plan forecasts of indicators.

Often, the target for the indicator is in itself the predicted result or outcome. The target is the predicted outcome or forecast for most of the 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

The Quesnel Timber Supply Area Rationale for AAC Determination, January 1, 2011[8], included sensitivity analysis around IRM objectives including those of the CCLUP (as per the January 23, 1996 Higher Level Plan Declaration and amended in 1999). 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 (March 2010). Further information pertaining to assumptions and analysis can be found within the Chief Foresters Rationale for AAC Determination for the Quesnel TSA (January 2011) and the Quesnel Timber Supply Area Timber Supply Review Data Package (April 2009)[8] .

CCLUP forecasting[9] completed to support preparation of the multiple accounts analysis, CCLUP monitoring, Timber Supply Review reporting and Canfor's Ecosystem Representation Analysis, together, support data collection, review and forecasting for targets and indicators.

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.

http://www.for.gov.bc.ca/hts/tsa/tsa26/2009_current/26ts09dp.pdf

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[8] Reference: Quesnel TSA – MoFM&L Rationale for Allowable Annual Cut Determination, Jim Snetsinger, Chief Forester. January, 2010. http://www.for.gov.bc.ca/hts/tsa/tsa26/

[9]Reference: http://www.ilmb.gov.bc.ca/slrp/lrmp/williamslake/cariboo_chilcotin/plan/biodiv/index.html .

5.7 Indicators in the SFMP

Indicator	**1.1.1 Ecosystem area by type**
Indicator Statement(s)	1.1.1. Percent representation of ecosystem groups across the DFA. A group would be defined down to the BEC variant level (i.e. SBSmw1)
Element(s)	1.1 Ecosystem Diversity
Value(s) and Objective(s)	Value 1.1: Ecosystem Diversity Objective 1.1: Maintain the diversity and pattern of communities and ecosystems within a natural range.
Strategy(s) Description	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. 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: a. Seed zones b. Protected area planning c. Land management planning d. Forest pest risk e. Natural disturbance types f. Wildlife habitat management 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: • to help assess the status of an ecosystem throughout a planning area; • to focus attention and tracking on ecosystems that merit conservation concern; and • to help rank allocation of resources to conservation efforts, such as parks, Wildlife Habitat Areas, Old Growth Management Areas (OGMA's) or Wildlife Tree Patches (WTPs), (Bunnell et al 2004). An analysis of ecosystem representation across all Canfor operations was conducted in 2011[10]. This analysis determined the abundance and representation of ecosystem groups within four distinct regions and 13 management units. The following steps were carried out for this analysis: • Identifying the non-harvesting landbase • Classifying the forested landbase into ecosystem groups • Evaluating the amount and how the ecosystem groups are distributed in the harvesting and non-harvesting landbase. The Quesnel DFA is within the west- central region and comprises 28 unique forested ecosystem groups.
Means of Achieving Objective & Target	Rare or uncommon ecosystem groups were identified by mapping at the BEC variant level or PEM site series level. The following criteria was used to select the site series that would be considered rare or uncommon • The ecosystem group is present on the DFA. (area >0%). • The forested area is <= 10,000 ha. in the West-central region. • The representation class is: ○ Low <20% of the area is in the NHLB. ○ Rare/uncommon abundance is <0.1% of the forest area • < 100% of the area of the ecosystem group is in the NHLB. 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).

[10] Reference: *Ecosystem Representation Analysis Final Report January 18th, 2012* Forest Ecosystem Solutions Ltd.

<table>
<tr><td>Forecast
Predicted Results or Outcome</td><td>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 sites series:
<table>
<tr><th colspan="6">Rare/Uncommon Ecosystems within the DFA</th></tr>
<tr><th>Region</th><th>Group #</th><th>Group</th><th>Site Series</th><th>Moisture-Nutrient Regime</th><th>Site Association</th></tr>
<tr><td>West-Central</td><td>50</td><td>subhygric-hygric SBPSdc</td><td>SBPS xc-06</td><td>Subhygric-hygric; medium-very rich</td><td>Sxw - Horsetail - Meadowrue</td></tr>
<tr><td>West-Central</td><td>50</td><td>subhygric-hygric SBPSdc</td><td>SBPS dc-06</td><td>Subhygric-hygric; rich-very rich</td><td>Sxw - Horsetail - Meadowrue</td></tr>
</table>
Current status: harvesting has not occurred on any of these sites since January 1st, 2011.</td></tr>
<tr><td>Forecast</td><td>A diversity of ecosystems while maintaining “rare” attributes, enabling a diversity and abundance of naturally occurring plants, animals and their habitats.</td></tr>
<tr><td>Target</td><td>Rare ecosystems groups as identified in the previous table will not be harvested.</td></tr>
<tr><td>Basis for the Target</td><td>Proactive measure to identify and conserve rare and uncommon ecological communities.</td></tr>
<tr><td>Monitoring & Measurement
Periodic</td><td>Identification of rare and uncommon ecosystems to occur with inventory updates that occur in conjunction with Timber Supply Review (generally every 5 years).</td></tr>
<tr><td>Annual</td><td>Report any incidents of harvesting that occurred in ecosystem groups defined as rare. Also report the number of hectares where harvesting occurred within uncommon ecosystem groups and the number of these hectares where specific management strategies to retain the characteristics of unmanaged forests were implemented.</td></tr>
<tr><td>Variance</td><td>Harvesting may occur in rare ecosystems for access, forest health, or safety issues as rationalized and documented by a qualified professional.</td></tr>
</table>

<table>
<tr><td>Indicator</td><td>1.1.2 Forest area by type or species composition</td></tr>
<tr><td>Indicator Statement(s)</td><td>1.1.2. Percent distribution of forest type (treed conifer, treed broad leaf, treed mixed) >20 years old across DFA</td></tr>
<tr><td>Element(s)</td><td>1.1 Ecosystem Diversity</td></tr>
<tr><td>Value(s) and Objective(s)</td><td>Value 1.1: Ecosystem Diversity
Objective 1.1: Maintain the diversity and pattern of communities and ecosystems within a natural range.</td></tr>
<tr><td>Strategy(s)
Description</td><td>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.

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.

The BC government FREP report #14 on Tree Species Composition and Diversity in British Columbia (August 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.

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.</td></tr>
<tr><td>Means of Achieving Objective & Target</td><td>Forest plans will incorporate reforestation strategies that retain the natural balance of broad forest types within the DFA.</td></tr>
<tr><td>Forecast
Predicted Results or Outcome</td><td>The following table describes the current and forecasted status 10 years from now on the DFA for broad forest types (2011 baseline data).
<table>
<tr><th colspan="4">Area Summary Forest Type</th></tr>
<tr><th>Forest Type</th><th>Current Status</th><th>10 Year Forecast</th><th>Increase/(Decrease)</th></tr>
<tr><td>Coniferous Leading</td><td>204,842.9</td><td>200,504.6</td><td>(4,338.2)</td></tr>
<tr><td>Percent of area</td><td>94.7%</td><td>94.4%</td><td>(0.3%)</td></tr>
<tr><td>Deciduous Leading</td><td>1,981.4</td><td>2,004.6</td><td>23.2</td></tr>
<tr><td>Percent of area</td><td>0.9%</td><td>0.9%</td><td>0.0%</td></tr>
<tr><td>Mixed Species</td><td>9,450.9</td><td>9,808.0</td><td>357.0</td></tr>
<tr><td>Percent of area</td><td>4.4%</td><td>4.6%</td><td>0.2%</td></tr>
</table></td></tr>
<tr><td>Forecast</td><td>Healthy ecosystems with a diversity of native broadleaf and coniferous species are maintained. It is expected that the deciduous and mixed wood component of the forest area will gradually increase over time as free growing stands contain a greater amount of deciduous. Species composition information is utilized in the Provincial Timber Supply Review.</td></tr>
<tr><td>Target</td><td>Deciduous and mixed species stands will comprise a minimum of 4.5% of the forest area on the DFA within ten years. Coniferous leading forest will comprise at least 90% of the area within 10 years. Maintain the baseline distribution between forest types.</td></tr>
</table>

Basis for the Target	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).
Monitoring & Measurement Periodic	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.
Annual	
Variance	None.

Indicator	1.1.3 Forest area by seral stage or age class
Indicator Statement(s)	1.1.3. Percent late seral forest area by ecological unit across the DFA. Late Seral is defined as a stand over a certain age. This age varies by landscape unit and eco unit. 4.1.1. Maintain the retention of existing (or replacement of) old forest retention areas (contained in OGMA's, protected areas, WTP's, inoperable ground).
Element(s)	1.1 Ecosystem Diversity 4.1 Carbon Uptake and Storage
Value(s) and Objective(s)	Value 1.1: Ecosystem Diversity Objective 1.1: Maintain the diversity and pattern of communities and ecosystems within a natural range. Value 4.1: Carbon Uptake and Storage Objective 4.1: Maintain the carbon uptake and storage processes.
Strategy(s) Description	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. 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. 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). 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. In their 2009 summary of carbon management in BC's forests[11] 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 CO_2 offsetting projects has built to the point where forest managers are seeking guidance. Equally important is the public's desire to understand the potential of provincial forests in mitigating climate change and to have this clearly communicated. Some work has taken place in assembling carbon yield curves, researching local carbon storage, and undertaking carbon accounting projects. However, no published handbooks or policies exist to guide forest managers, practitioners, or the public". 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

[11] Reference: Carbon Management in British Columbia's Forests: Opportunities and Challenges. Forrex Series 24. 2009

	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 will continue to report on the target within this indicator (Percent late seral forest area by ecological unit across the DFA) as well as related indicators and targets for forest land conversion and reforestation success. Collectively, these indicator statements and targets demonstrate commitment to positively influence carbon balance within the management unit. 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. If government elects not to conduct this analysis, Canfor will select the appropriate forest carbon stock model and calculate carbon stock within the TSA.
Means of Achieving Objective & Target	The relative amount of late seral stage or old forests have 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, except for the one time drawdown allowed in the CCLUP for the salvage of dead pine. Contribute positively to carbon uptake and storage by managing the existing amount of designated old forest retention areas either through their protection from harvesting or by replacing area where incursions are necessary with old forests having similar attributes. For the purpose of this DFA indicator, late seral is defined according to the biodiversity guidebook for NDT3 and includes stands that are greater than 100 years old. The ecological units used for the purpose of reporting at the DFA level are as follows: *SBPSdc, SBPSmc, SBPSmk, SBSdw2, SBSmc2, MSxv, ESSFmv1*
Forecast Predicted Results or Outcome	The amount of late seral age class by ecological unit as compared to the target amount is as indicated in the following table (baseline data from the CCLUP seral area report generated by ILMB report dated 2010)

Late Seral Summary by Ecological Unit in the DFA

Ecological Unit	DFA Forested Area (ha)	Targeted Percent Late Seral in the DFA	Actual Percent Late Seral in the DFA	Percent Late Seral Available in the DFA
LU – Baezeko				
MSxv	4,953	14%	29%	15%
SBPSdc	25,294	8%	62%	54%
SBPSmc	4,449	8%	70%	62%
SBPSmk	6,322	8%	53%	45%
SBSdw2	635	11%	0%	-11%
SBSmc2	6,199	11%	47%	36%
LU – Baker				
MSxv	84	39%	31%	-8%
SBPSdc	7,157	25%	56%	31%
SBPSmk	12,687	25%	39%	14%
SBSdw2	867	34%	36%	2%
SBSmc2	6,546	34%	29%	-5%
LU - Chine				
SBPSdc	19,278	17%	84%	67%
SBPSmc	309	17%	93%	76%
SBSmc2	4,483	23%	58%	35%
LU – Coglistiko				

	SBPSdc	7,395	17%	84%	67%
	SBPSmc	2,301	17%	78%	61%
	SBSmc2	3,263	23%	69%	46%
	LU - Marmot				
	ESSFmv1	18	14%	4%	-10%
	MSxv	2,002	14%	35%	21%
	SBPSdc	21,345	8%	61%	53%
	SBPSmk	6,382	8%	44%	36%
	SBSdw2	1,599	11%	56%	45%
	SBSmc2	576	11%	38%	27%
	LU – Narcosli				
	SBPSmk	56	8%	56%	48%
	SBSdw2	254	11%	3%	-8%
	SBSmc2	1,868	11%	37%	26%
	LU – Pantage				
	ESSFmv	577	28%	59%	31%
	SBPSdc	6,182	17%	57%	40%
	SBPSmk	15,754	17%	26%	9%
	SBSdw2	452	23%	22%	-1%
	SBSmc2	10,709	23%	39%	16%
	LU – Ramsey				0%
	MSxv	150	14%	10%	-4%
	SBPSdc	369	8%	25%	17%
	SBPSmk	11,694	8%	26%	18%
	LU - Snaking				
	ESSFmv	60	28%	26%	-2%
	SBPSdc	13,070	17%	50%	33%
	SBPSmk	11,916	17%	35%	18%
	SBSmc2	10,581	23%	37%	14%
	LU - Tibbles				
	MSxv	66	14%	0%	-14%
	SBPSdc	3,780	8%	45%	37%
	SBPSmk	4,489	8%	37%	29%
	SBSmc2	3,959	11%	28%	17%
	LU - Wentworth				
	MSxv	3,689	14%	33%	19%
	SBPSdc	14,520	8%	64%	56%
	SBPSmk	1,575	8%	39%	31%
	SBSmc2	95	11%	77%	66%
Forecast	Protected Area, Old Growth Management Area (OGMA), and Wildlife Tree Patch Strategies, together with inoperable or inaccessible areas, ensure retention of old growth to sustain biodiversity and ecosystem objectives. Carbon stored within these reserve areas are an important part of the entire carbon cycle.				

Target	Maintain amount of area consistent with the CCLUP.
Basis for the Target	The following documents were used as a basis for the targets: • The CCLUP, • Canfor Biodiversity Strategy.
Monitoring & Measurement Periodic	Utilize targeted percent late seral baseline information or legal targets. Identification of actual percent late seral by ecological unit to occur with inventory updates in conjunction with Timber Supply Review (generally every 5 years). Report as per the table above.
Annual	
Variance	The seral targets set out in the CCLUP have allowed for a one time draw down below the target to facilitate the salvage opportunity of dead pine stands as per the CCLUP Regional Biodiversity Conservation Strategy Update #8. In these situations, the target is still considered to have been met, despite being below the target set in the CCLUP

Indicator	1.1.4 Degree of within-stand structural retention
Indicator Statement(s)	1.1.4(a). Percent of stand structure retained across the DFA in harvested areas 1.1.4(b). Percent of blocks meeting dispersed retention levels as prescribed in the site plan/logging plan 1.1.4(c). Number of non-conformance where forest operations are not consistent with riparian management requirements as identified in operation plans
Element(s)	1.1 Ecosystem Diversity 1.3 Genetic Diversity
Value(s) and Objective(s)	Value 1.1: Ecosystem Diversity Objective 1.1: Maintain the diversity and pattern of communities and ecosystems within a natural range. Value 1.3: Genetic Diversity Objective 1.3: Conserve the genetic diversity found naturally within trees.
Strategy(s) Description	Complexity of stand structure is a key component of an operational strategy to sustain biodiversity in forested ecosystems (Bunnell et al 1999). Structural complexity helps to mitigate the potential deleterious effects of large scale stand and landscape simplification associated with intensive short-rotation forest management. It can be provided by the adoption of retention silvicultural systems, a practice broadly applied in interior BC (Lindenmayer and Franklin 2003, Bunnell et al. 1999). Wildlife tree patches (WTPs) are a retention tool recommended for use in stand and landscape planning to help sustain biodiversity and ecological processes. They are used to provide protection for known wildlife habitat features (including standing dead and dying trees), to provide attributes important to key ecological processes (including woody debris, tree species diversity, and understory vegetation diversity), to protect smal, 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 WTPs can be used with other protected areas such as riparian reserves, old gowth 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) WTPs. By maintaining WTPs, 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. 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. Riparian management areas, provide opportunities for connectivity of forested cover along waterways, which are generally areas with high value for wildlife habitat and movement. Operational plans influenced by riparian areas contain site specific commitments that range from 100% protection to 100% removal of merchantable trees, generally with efforts to mange existing understory trees and shrubs.
Means of Achieving Objective & Target	Companies will achieve targets through allocation of retention patches and dispersed retention (individual trees and stubs) during forest development planning. Where applicable plans will also contain riparian area comitments. 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. Plans are properly executed providing desired results. Post harvest evaluations assess plan conformance.

<table>
<tr><td>Forecast
Predicted Results or Outcome</td><td>1.1.4(a). There was 19 percent of stand structure retained across the DFA in harvested areas (2010 baseline data).
<table>
<tr><th colspan="3">Average of the area retained on harvested areas</th></tr>
<tr><th>Year</th><th>Total Area with Harvesting completed (ha)</th><th>Average % Retention</th></tr>
<tr><td>2004</td><td>4622</td><td>10.6</td></tr>
<tr><td>2005</td><td>3730</td><td>10.4</td></tr>
<tr><td>2006</td><td>2319.7</td><td>22.0</td></tr>
<tr><td>2007</td><td>2267.6</td><td>13.0</td></tr>
<tr><td>2008</td><td>3969.9</td><td>18.0</td></tr>
<tr><td>2009</td><td>3786.8</td><td>20.0</td></tr>
<tr><td>2010</td><td>1561.9</td><td>19.0</td></tr>
</table>
1.1.4(b). 100 percent of blocks meet dispersed retention levels as prescribed in the site plan/logging plan areas (2010 baseline data).
1.1.4(c). There were no non-conformance where forest operations are not consistent with riparian management requirements as identified in operation plans. (2010 baseline data).</td></tr>
<tr><td>Forecast</td><td>Healthy ecosystems with a diversity and abundance of native species and habitats. Harvested areas with habitat attributes that will help to sustain biological and ecological processes. Properly functioning riparian systems leading to the conservation of fish habitat and maintenance of water quality.</td></tr>
<tr><td>Target</td><td>1.1.4(a) DFA target 7% for Canfor Blocks
1.1.4(b) 100%
1.1.4(c) 0%</td></tr>
<tr><td>Basis for the Target</td><td>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.</td></tr>
<tr><td>Monitoring & Measurement
Periodic</td><td></td></tr>
<tr><td>Annual</td><td>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.</td></tr>
<tr><td>Variance</td><td>None.</td></tr>
</table>

Indicator(s)	**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**
Indicator Statement(s)	1.2.1. Percent of forest management activities consistent with management strategies for Species of Management Concern. (This includes at risk species as well as other focal species whose habitat may be impacted by forestry activities)
Element(s)	1.2 Species Diversity 1.3 Genetic Diversity
Value(s) and Objective(s)	Value 1.2: Species Richness Objective 1.2: Maintain suitable habitat for indicator species. Value 1.3: Genetic Diversity Objective 1.3: Conserve the genetic diversity found naturally within trees.
Strategy(s) Description	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 Mangement Concern. 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. Canfor includes commitments in site/logging plans or other operatinal 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.
Means of Achieving Objective & Target	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. For some of these species, specific habitat conservation targets have been established that identify the amount, distribution and attributes of desireable 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.
Forecast Predicted Results or Outcome	See Appendix 3 for the complete list of Species of Management Concern within the DFA. 100% of forest management activities were consistent with management strategies for Species of Management Concern.
Forecast	Short and long term supply of desireable habitat for all Species of Management Concern (see Appendix 3) resulting in stable populations.
Target	100% conformance with management strategies
Basis for the Target	Legal obligations, use of best available information. 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 mange 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	None.

Indicator(s)	**1.2.3 Proportion of regeneration comprised of native species** **1.3.1 Genetic diversity (not a Core Indicator)**
Indicator Statement(s)	1.2.3. Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use
Element(s)	1.2 Species Diversity 1.3 Genetic Diversity
Value(s) and Objective(s)	Value 1.2: Species Richness Objective 1.2: Maintain suitable habitat for indicator species. Value 1.3: Genetic Diversity Objective 1.3: Conserve the genetic diversity found naturally within trees.
Strategy(s) 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 pertainaing 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.
Forecast Predicted Results or Outcome	100% of regeneration was consistent with provincial regulations and standards for seed and vegetative material use. (2010 baseline data).
Forecast	Healthy, productive and genetically diverse forests that are ecologically suited to the site.
Target	Annually, 100% conformance with the standards.
Basis for the Target	Legal obligations, use of best available information.
Monitoring & Measurement Periodic	
Annual	For the reporting period, Canfor 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, other than what is provided for within the legal framework (statutory decision makers may approve variances from standard requirements provided adequate rationale is provided and long-term objectives continue to be met).

Indicator	**1.4.1 Proportion of identified sites with implemented management strategies**
Indicator Statement(s)	1.4.1. Percent of forest management activities consistent with management strategies for protected areas and natural sites of significance (geological, biological)
Element(s)	1.4 Protected Areas and Sites of Special Biological and Cultural Significance
Value(s) and Objective(s)	Value 1.4: Protected Areas and Sites of Special Biological and Cultural Significance Objective 1.4: To maintain representative areas of naturally occurring and important ecosystems, rare physical environments and sites of cultural significance.
Strategy(s) Description	Canfor participates in higher level and strategic planning that has delineated a series of protected areas (i.e. parks, ecological reserves) and old growth management areas with the DFA. This achieved the geographic and ecological goals of provincial Protected Areas Strategies (PAS), providing representation of the cross-section of ecosystems and of old forest attributes. Ecosystems of special biological significance have generally been given a high priority for inclusion in the protected area strategy. Timber harvesting, mining and hydroelectric development are usually not permitted within protected areas and other resource development activities such as grazing and commercial tourism development, are permitted only in specified areas and under strict guidelines. Incursions into OGMAs are generally tolerated when Canfor replaces that area with other areas of suitable attributes. 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. Canfor includes commitments in site/logging plans or other operational plans to ensure activities do not compromise these protected areas.
Means of Achieving Objective & Target	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 deactiviation or rehabilitation, additional dispersed retention or a uniqure siliviculture 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.
Forecast Predicted Results or Outcome	100% of forest management activities are consistent with management strategies for protected areas and natural sites of significance (geological, biological). (2010 baseline data).
Forecast	A system of landscape and stand level protected areas that conserve sites of special biological significance.
Target	100%
Basis for the Target	Legal obligations, use of best available information and application of Canfor's biodiversity srrategy
Monitoring & Measurement Periodic	
Annual	For areas where forest activities occurred during the annual reporting period that contained operational plan commitments to manage areas identified as being of special biological significance or to manage for the continued integrity of existing protected areas, 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	None.

Indicator	**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**
Indicator Statement(s)	1.4.2. % of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes 6.2.1. % of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes
Element(s)	1.4 Protected Areas and Sites of Special Biological and Cultural Significance 6.2 Respect for Aboriginal Forest Values, Knowledge, and Uses
Value(s) and Objective(s)	Value 1.4: Protected Areas and Sites of Special Biological and Cultural Significance Objective 1.4: To maintain representative areas of naturally occurring and important ecosystems, rare physical environments and sites of cultural significance. Value 6.2: Aboriginal Forest Values and Uses Objective 6.2: Respect known traditional aboriginal forest values and uses.
Strategy(s) 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 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.
Means of Achieving Objective & Target	Efforts have been made to understand which Aboriginal 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 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 applicable post activity forms (i.e. road construction or site preparation) assess plan conformance.
Forecast Predicted Results or Outcome	100% of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes (2010 baseline data).
Forecast	Open and meaningful relationships with local Aboriginals leads to a trust in sharing sensitive information. It is expected that forest plans will contain information on how these sites will be managed or protected. Forest operations that properly execute the forest plans will adequately protect sites of sacred and cultural significance.
Target	1.4.2. **and** 6.2.1. : 100%
Basis for the Target	Legal obligations, use of best available information and alignment with Canfor's Sustainable Forest Management Commitments
Monitoring & Measurement Periodic	
Annual	Retain a record of the Aboriginal communities whose traditional territory (any part) overlaps with the DFA for the purpose of communication with affected parties. Retain a record demonstrating that forest management plans within the DFA were shared/discussed with Aboriginal communities. Report: • Number of instances where discussions lead to the identification of Aboriginal forest values, knowledge and uses that required specific management or protection. • Where the above occurred, report the number of times where operational plans specified how these values were considered.
Variance	**1.4.2**. and **6.2.1**. 0%

Indicator	2.1.1 Reforestation success
Indicator Statement(s)	2.1.1(a). Average Regeneration delay for stands established annually 2.1.1(b). Percent of harvested area achieving free growing by assessment dates
Element(s)	2.1 Forest Ecosystem Resilience 4.1 Carbon Uptake and Storage (Indicator 2.1.1(a) only)
Value(s) and Objective(s)	Value 2.1: Ecosystem Resilience Objective 2.1: Maintain a natural range of variability in ecosystem function, composition, and structure which will allow ecosystems to recover from disturbance and stress. Value 4.1: Carbon Uptake and Storage (Indicator 2.1.1(a) only) Objective 4.1: Maintain the carbon uptake and storage processes. (Indicator 2.1.1(a) only)
Strategy(s) Description	Ensuring a diversity of tree species is maintained improves ecosystem resilience and productivity and positively influences forest health. Prompt reforestation ensures that the productive capacity of forest 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. This not only helps to maintain the natural forest composition in an area, but it also lends itself to long term forest health and productive forests that uptake carbon. 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 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. 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. If government elects not to conduct this analysis, Canfor will select the appropriate forest carbon stock model and calculate carbon stock within the TSA.
Means of Achieving Objective & Target	Canfor will specify tree species that are ecologically suited to the site in a timely manner. Silviculture treatment regimes and forward plans schedule activities consistent with established key dates contained within plans.

<table>
<tr><td>Forecast
Predicted Results or Outcome</td><td>2.1.1(a). The average regeneration delay was 3.6 years. (2010 baseline data).
<table>
<tr><th colspan="2">Average years to declare regeneration delay met following the start of harvesting.</th></tr>
<tr><th>Year</th><th>Years for regeneration delay to be declared met</th></tr>
<tr><td>2004</td><td>3.5</td></tr>
<tr><td>2005</td><td>2.8</td></tr>
<tr><td>2006</td><td>2.9</td></tr>
<tr><td>2007</td><td>2.5</td></tr>
<tr><td>2008</td><td>2.5</td></tr>
<tr><td>2009</td><td>2.5</td></tr>
<tr><td>2010</td><td>3.6</td></tr>
</table>
2.1.1(b). Percent of harvested area achieving free growing by assessment dates is 100% (2010 baseline data).</td></tr>
<tr><td>Forecast</td><td>Prompt reforestation ensures that the productive capacity of forest landbase to grow trees is maintained. Promptness also aids in providing young trees a head start against competing vegetation, helping to reduce the need for manual or chemical brushing treatments.
Healthy ecosystems with a diversity of native broadleaf and coniferous species maintained at endemic and sustainable levels. Forests that uptake carbon and positively contribute to a reduction in carbon emissions.</td></tr>
<tr><td>Target</td><td>2.1.1(a) Regeneration established in 3 years or less
2.1.1(b) 100%</td></tr>
<tr><td>Basis for the Target</td><td>This target promotes prompt reforestation and exceeds legal requirements. Early establishment of a viable crop of trees reduces the need for subsequent interventions (re-planting, brushing) and positively contributes to carbon sequestration.</td></tr>
<tr><td>Monitoring & Measurement
Periodic</td><td></td></tr>
<tr><td>Annual</td><td>Report the average time (weighted by area) for regeneration establishment on areas where regeneration delay was declared during the reporting period.</td></tr>
<tr><td>Variance</td><td>2.1.1(a) 1 year
2.1.1(b). 0</td></tr>
</table>

<table>
<tr><td>Indicator</td><td>2.2.1 Additions and deletions to the forest area</td></tr>
<tr><td>Indicator Statement(s)</td><td>2.2.1. Percent of gross forested landbase in the DFA converted to non-forest land use through forest management activities</td></tr>
<tr><td>Element(s)</td><td>2.2 Forest Ecosystem Productivity
4.2 Forest Land Conversion</td></tr>
<tr><td>Value(s) and Objective(s)</td><td>Value 2.2: Forest Ecosystem Productivity
Objective 2.2: Maintain ecosystem productive capacity by ensuring ecosystem conditions are maintained that are capable of supporting naturally occurring species.
Value 4.2: Forest Land base
Objective 4.2: Sustain forests lands within our control within the DFA.</td></tr>
<tr><td>Strategy(s)
Description</td><td>Given the Crown tenure situation in Canada forest companies generally have little influence on any additions or deletions to the forest area, which generally are a result of government land use objectives. Where companies can have an influence is through their practices, particularly as it pertains to permanent access structures such as roads, landings and borrow pits. Unless rehabilitated, these access structures occupy otherwise productive land suitable for forests. Target is focused on those activities where forest companies have management responsibility (i.e. excludes other permanent losses resulting from other industries sharing the overall forest estate. Actual reporting against 3% target anticipated to increase over time until timber harvesting landbase is fully accessed.

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.

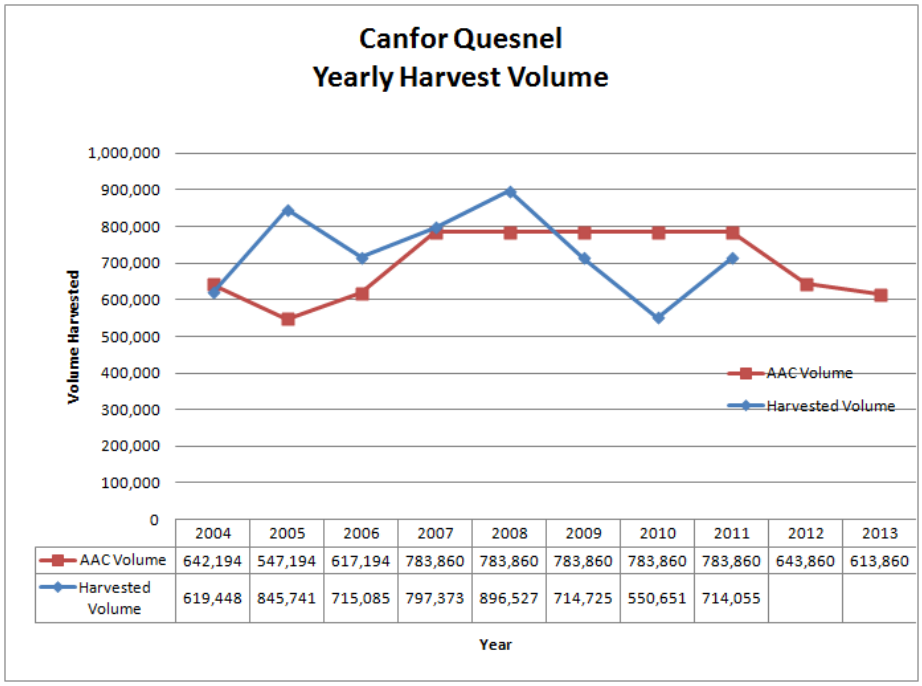
Canfor will continue to report on the target within this indicator (forest land conversion) as well as related indicators and targets for regeneration delay and retention of old forest. Collectively, these indicator statements and targets demonstrate commitment to positively influence carbon balance within the management unit.

Canfor will continue to monitor developments in carbon sequestration modeling both at the provincial and regional level and will utilize this information within the SFM Plan. At the very least, Canfor will rely upon forest carbon analysis conducted in conjunction with the next Timber Supply Review. If government elects not to conduct this analysis, Canfor will select the appropriate forest carbon stock model and calculate carbon stock within the TSA.</td></tr>
<tr><td>Means of Achieving Objective & Target</td><td>Loss of the landbase to access structures resulting from forest management activities can be minimized with
• careful access planning to minimize the amount of permanent access structures
• and use of proper road construction, maintenance, deactivation and rehabilitation procedures
Conversions to the forest landbase are calculated and included in operational plans. conditions. Plans are properly executed providing desired results. Post harvest evaluations and other inspections assess plan conformance.</td></tr>
<tr><td>Forecast
Predicted Results or Outcome</td><td>The following table identifies the percentage of gross forested landbase in the DFA converted to non-forest land use through forest management activities. (2011 baseline data).
<table>
<tr><th colspan="3">Gross Forested Landbase in the DFA Converted to Non-forest Land Use</th></tr>
<tr><td>Gross Forest area = 314,290 ha.</td><td>Current Status</td><td>Future Status[1]</td></tr>
<tr><td>Ha.</td><td>5,243.7</td><td>5,562.3</td></tr>
<tr><td>PCT of Gross Forest Area</td><td>1.67%</td><td>1.77%</td></tr>
</table>
[1] Future roads are permanent access structures that will be constructed in approximately the next two years.</td></tr>
<tr><td>Forecast</td><td>Productive forest soils with minimized losses from forest management activities are expected to be achieved. The timber harvesting landbase is reduced by permanent access structures (percent non-productive unnatural) in Provincial Timber Supply Review. It is forecast that at the current rate of development the target area for permanent access structures will be reached in approximately 26 years.</td></tr>
<tr><td>Target</td><td>Less than 3% of gross forested landbase.</td></tr>
</table>

Basis for the Target	Focused on removal of productive forest land base where forest managers have direct management responsibility. Provides an overall DFA indicator and target, 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.
Monitoring & Measurement Periodic	Permanent access structures percent are utilized in Provincial Timber Supply Review forecasts. 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

Indicator	**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**
Indicator Statement(s)	2.2.2. % of volume harvested compared to the allocated harvest level 5.1.1(a). % of volume harvested compared to the allocated harvest level
Element(s)	2.2 Forest Ecosystem Productivity
Value(s) and Objective(s)	Value 2.2: Forest Ecosystem Productivity Objective 2.2: Maintain ecosystem productive capacity by ensuring ecosystem conditions are maintained that are capable of supporting naturally occurring species. Value 5.1: Timber and Non-Timber Benefits Objective 5.1: Provide opportunities for a feasible mix of timber, recreation, and non-timber commercial activities.
Strategy(s) Description	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). 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). 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. 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. 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 to the minimum extent and only if justified. The long-term level should provide an even level of growing stock over the long term. 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.

<table>
<tr><td>Means of Achieving Objective & Target</td><td>Forest licensees contribute to the sustainable harvest level by adhering to their apportioned harvest volume identified in their forest license 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.
The following table identifies the Forest Licenses that authorizes Canfor's Quesnel operations to harvest within the DFA.

<table><tr><th colspan="4">Summary of Forest Licenses for Canfor's Quesnel Operations</th></tr><tr><th>Forest License</th><th>Type</th><th>AAC</th><th>Remarks</th></tr><tr><td>A20011</td><td>Replaceable</td><td>382,194</td><td></td></tr><tr><td>A59411</td><td>non-replaceable</td><td>40,000</td><td></td></tr><tr><td>A67545</td><td>non-replaceable</td><td>30,000</td><td>Expires at the end of 2012</td></tr><tr><td>A75167</td><td>non-replaceable</td><td>25,000</td><td></td></tr><tr><td>A83420</td><td>non-replaceable</td><td>166,666</td><td></td></tr><tr><td>Total Volume</td><td></td><td>643,860</td><td></td></tr></table></td></tr>
<tr><td>Forecast
Predicted Results or Outcome</td><td>The following graph illustrates Canfor's past and forecasted performance from 2004 to 2013.
 
</td></tr>
<tr><td>Forecast</td><td>It is expected that short and long term harvest flows that reflect forest conditions, forest practices, and the socio-economic objectives of the Crown will be implemented in the DFA. 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.
The latest timber supply review for the Quesnel TSA was completed in 2010. The review indicated the new AAC for the Quesnel TSA is 4,000,000 cubic metres of which 650,000 m3 can be non-pine volume.
More information on the timber supply review can be found at: http://www.for.gov.bc.ca/hts/tfls.htm</td></tr>
<tr><td>Target</td><td>100% over the cut control period as defined by Timber supply forecast harvest flow</td></tr>
<tr><td>Basis for the Target</td><td>Legal requirements.</td></tr>
<tr><td>Monitoring & Measurement
Periodic</td><td>The schedule for subsequent Timber Supply Reviews for the Quesnel TSA can be found at: http://www.for.gov.bc.ca/hts/schedule.htm .</td></tr>
</table>

Annual	Report (m3) the harvest level allocated for each licence and harvest level cut (cut control volume) for the past reporting year.
Variance	According to the Cut Control Regulation and Policy

Indicator	**3.1.1 Level of soil disturbance**
Indicator Statement(s)	3.1.1. % of harvested blocks meeting soil disturbance objectives identified in plans (FSP, SP)
Element(s)	3.1 Soil Quality and Quantity
Value(s) and Objective(s)	Value 3.1: Soil Productivity Objective 3.1: Protect soil resources to sustain productive forests.
Strategy(s) Description	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 harvest operations.
Means of Achieving Objective & Target	Soil disturbance objectives are written into plans often by committing to the maximum planned levels of soil disturbance assigned to a harvest area based on related field data. Harvest operations are conducted in a way that ensures commitments can be achieved. Post harvest evaluations and other inspections assess plan conformance.
Forecast Predicted Results or Outcome	Canfor Quesnel met soil disturbance objectives on 100% of areas harvested (2010 baseline data).
Forecast	Productive forest soils with minimized losses from forest operations.
Target	100% of blocks meet soil disturbance objectives (2010 baseline data).
Basis for the Target	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 landbase.
Monitoring & Measurement Periodic	
Annual	Report the area (hectares) 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). 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.
Variance	None

Indicator	**3.1.2 Level of downed woody debris**
Indicator Statement(s)	3.1.2. Percent of audited cutblocks where post harvest CWD levels are within the targets contained in Plans (FSP, SP)
Element(s)	3.1 Soil Quality and Quantity
Value(s) and Objective(s)	Value 3.1: Soil Productivity Objective 3.1: Protect soil resources to sustain productive forests.
Strategy(s) Description	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 (BCMOFR 2008). For operational purposes CWD is defined as material greater than 10cm in diameter, in all stages of decay (BCMOFR, 2000). Coarse Woody Debris plays numerous functional roles in natural and managed forests and aquatic ecosystems including: providing feeding, breeding and shelter substrate for may 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. Potential sources of CWD in managed stands can include the following: • Logs already lying on the forest floor that are left after harvesting • Uneconomic wood resulting from harvest operations including breakage, short pieces and tops • Long-term CWD recruitment may be addressed by leaving reserves and wildlife trees, possibly including cull trees • Dispersed wildlife trees including green trees, stubbed trees and standing dead trees Retain and leave standing trees below utilization standards (poles and bigger) as a long-term CWD recruitment source
Means of Achieving Objective & Target	Companies will achieve objectives and targets specific to CWD through the possible application of the following procedures and controls: • Training for licensee staff and contractors specific to CWD management and best management practices • Legislative requirements specific to CWD • Harvesting preworks and inspections • Conducting implementation monitoring to assess success of implementation of controls and possible opportunities for improvement • Conducting effectiveness monitoring to assess if controls are effective at achieving the desired results CWD is managed on a rotation basis and as such strategies must address recruitment of CWD over the short and long term.
Forecast Predicted Results or Outcome	100 percent of audited cutblocks had post harvest CWD levels within the targets contained in Plans (FSP, SP) (2010 baseline data).
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.
Target	100% of blocks audited annually will meet targets.
Basis for the Target	Legal requirements, "Coarse Woody Debris Best Management Practices", and "Chief Forester's Guidance on Coarse Woody Debris Management 2010".

Monitoring & Measurement 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 the licensee specific 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 an annual basis a random sample of blocks will be generated (where harvesting was completed during the reporting period). These assessed for consistency with legal requirements and CWD Best Management Practices. Current status results will be calculated by determining the ratio of these sample blocks that are consistent with legislative and operational controls.
Variance	None

Indicator	**3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance**
Indicator Statement(s)	3.2.1(a). Sensitive watersheds that are above Peak Flow targets will have further assessment. 3.2.1(b). % of high hazard drainage structures in sensitive watersheds with identified water quality concerns that have mitigation strategies implemented.
Element(s)	3.2 Water Quality and Quantity
Value(s) and Objective(s)	Value 3.2: Water Quantity and Quality Objective 3.2: Maintain water quality and quantity.
Strategy(s) Description	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 Clearcut Area or ECA). These disturbed areas accumulate more snow and subsequently can deliver more water as the snow melts more rapidly in the spring. 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. Target 3.2.1(a) takes a measure of a select group of watersheds within the DFA that have been identified as sensitive. These watersheds will have an assigned target for peak flow (such as ECA or peak flow hazard). If the Peak Flow target for sensitive watersheds has or will be exceeded by planned harvesting, a more detailed assessment will be performed that will evaluate potential impacts and provide recommendations to mitigate those impacts. 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. Strategies could range from structure replacement to periodic monitoring.
Means of Achieving Objective & Target	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) further detailed assessments are conducted. Peak flow to be calculated using process identified in the BC Interior watershed assessment procedure. 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 followed.
Forecast Predicted Results or Outcome	**3.2.1(a).** The Baker Creek watershed is acknowledged as a publicly sensitive watershed and threshold levels have not been determined at this time (2011 Baseline data). **3.2.1(b).** As this is a new target, the 2011 Monitoring Report results will be used to establish the baseline data.
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	100% 100%
Basis for the Target	Places emphasis and resources on most sensitive and high risk areas. Ensures focused assessment of watershed conditions and drainage structures.
Monitoring & Measurement Periodic	
Annual	**3.2.1(a).** Report the number of sensitive watersheds where peak flow targets were exceeded and harvesting occurred. Identify the watershed(s) and for each, whether a further detailed assessment was conducted prior to harvest. **3.2.1(b).** Report the number of high risk drainage structures within the sensitive watersheds. Further report whether each had a mitigation strategy and whether that strategy was implemented as planned.

Variance	**3.2.1(a):** -10% **3.2.1(b).** Nil

[Element 4.1 Carbon Uptake and Storage]

The indicator for Element 4.1 is covered under indicator 1.1.3 (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]

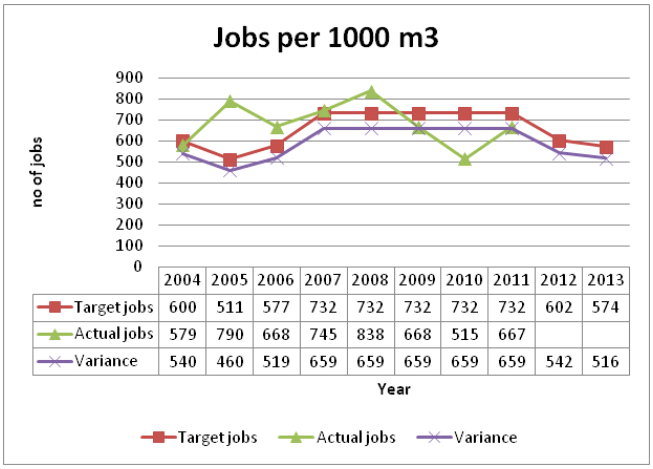
Core Indicator 5.1.1(a) % of volume harvested compared to allocated harvest level is covered under Indicator 2.2.2 (above).

<table>
<tr><td>Indicator</td><td>5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA</td></tr>
<tr><td>Indicator Statement(s)</td><td>5.1.1(b). Conformance with strategies for non-timber benefits identified in FSP, SP</td></tr>
<tr><td>Element(s)</td><td>5.1 Timber and Non-Timber Benefits</td></tr>
<tr><td>Value(s) and Objective(s)</td><td>Value 5.1: Timber and Non-Timber Benefits
Objective 5.1: Provide opportunities for a feasible mix of timber, recreation, and non-timber commercial activities.</td></tr>
<tr><td>Strategy(s)
Description</td><td>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.
Timber benefits 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: http://www.for.gov.bc.ca/hts/pubs/tsr/tsrbkg.htm. Support for local communities through business relationships provides employment diversification and increased local revenue.
Non-timber benefits 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.</td></tr>
<tr><td>Means of Achieving Objective & Target</td><td>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.
Continued discussions with existing licence/rights holders, interested public and Aboriginals.
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.</td></tr>
<tr><td>Forecast
Predicted Results or Outcome</td><td>Target 5.1.1(b). There were no non-conformances to plan commitments pertaining to non timber resource users (2010 baseline data).
<table>
<tr><th colspan="3">Conformance with strategies for non-timber benefits identified in FSP or SP</th></tr>
<tr><th>Non-timber resources</th><th>Strategies [1]</th><th>Non- conformances [2]</th></tr>
<tr><td>Access Management</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Visual Quality</td><td>1</td><td>0</td></tr>
<tr><td>Cultural/historical [3]</td><td>1</td><td>0</td></tr>
<tr><td>Lakeshore</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Range</td><td>1</td><td>0</td></tr>
<tr><td>Recreation</td><td>1</td><td>0</td></tr>
<tr><td>Stakeholders</td><td>1</td><td>0</td></tr>
<tr><td>Other</td><td></td><td></td></tr>
<tr><td>Total</td><td>5</td><td>0</td></tr>
</table>
1 - Plans that have strategies identified.
2 - Plans that did not implement the strategies as assessed post harvest
3 – Non aboriginal cultural/historical values</td></tr>
</table>

Forecast	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.
Target	5.1.1(b). No non-conformances with SP's
Basis for the Target	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.
Monitoring & Measurement Periodic	
Annual	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
Variance	None

Indicator	5.2.1 Level of investment in initiatives that contribute to community sustainability
Indicator Statement(s)	5.2.1(a). Level of Investment in local communities 5.2.1(b) List of Donations
Element(s)	5.2 Communities and Sustainability
Value(s) and Objective(s)	Value 5.2: Timber and Non-Timber Benefits Objective 5.2: Provide opportunities for a feasible mix of timber, recreation, and non-timber commercial activities.
Strategy(s) Description	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. 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. The targets measure the amount of spending in forest related activities that occur on the DFA by local contractors/suppliers. A local contractor or supplier is defined as one that resides within or in the vicinity of the DFA. 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. The development and maintenance of a list of all recipients receiving donations from Canfor will also help ensure that donations are being fairly distributed to a variety of community causes.
Means of Achieving Objective & Target	Companies track all spending pertaining to forest related activities (operations, management) within the DFA, separated by that occurring locally. A list that is maintained will help ensure that a transparent process exists for a fair distribution of donations.
Forecast Predicted Results or Outcome	5.2.1(a) 54% of spending pertaining to forest related activities occurred locally (2011 baseline data). In 2010, 55% of spending pertaining to forest related activities occurred locally. 5.2.1(b): A list of Donations that have been made in 2010 is available. Donations were not made to any specific local Quesnel organizations, but some were made to organizations such as Salvation Army and United Way that would benefit the area.
Forecast	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.
Target	5.2.1(a). Maintain % of dollars spent in local communities based on a 5 year rolling average 5.2.1(b). Maintain a list of communities/groups receiving Corporate and/or Divisional donations.
Basis for the Target	Target based on past performance and reflects a desire to enhance community well-being.
Monitoring & Measurement Periodic	
Annual	Use internal accounting systems to determine total amount of spending and that occurring locally during the reporting period.
Variance	5.2.1(a). -10% 5.2.1 (b). None

Indicator	**5.2.2 Level of investment in training and skills development**
Indicator Statement(s)	5.2.2. Training in environmental and safety procedures in compliance with company training plans
Element(s)	5.2 Communities and Sustainability
Value(s) and Objective(s)	Value 5.2: Timber and Non-Timber Benefits Objective 5.2: Provide opportunities for a feasible mix of timber, recreation, and non-timber commercial activities.
Strategy(s) 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.
Forecast Predicted Results or Outcome	In 2011, 100% of Canfor Staff was current with the required safety and environmental training as required in the Canfor Training Matrix for their jobs.
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.
Target	100% of company employees and contractors will have both environmental and safety training
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).
Monitoring & Measurement Periodic	
Annual	Report the total number of company employees and forest contractors and identify the number of those that had received both environmental and safety training in accordance with training plan expectations.
Variance	5%

Indicator	**5.2.3 Level of direct and indirect employment**
Indicator Statement(s)	5.2.3. Level of direct and indirect employment
Element(s)	5.2 Communities and Sustainability
Value(s) and Objective(s)	Value 5.2: Timber and Non-Timber Benefits Objective 5.2: Provide opportunities for a feasible mix of timber, recreation, and non-timber commercial activities.
Strategy(s) 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. 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. Using employment data from 2010 Public Discussion Paper for the Quesnel TSR[12] the multiplier for direct jobs for employment within the TSA is 0.57 person/years per 1000m3 of harvest for the period from 2004 to 2009. There is an additional 0.36 person/years of direct and induced employment per 1000 m3 of harvest. 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.
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.
Forecast Predicted Results or Outcome	The following chart and table shows the performance over the last several years.  2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 Target jobs 600 511 577 732 732 732 732 732 602 574 Actual jobs 579 790 668 745 838 668 515 667 Variance 540 460 519 659 659 659 659 659 542 516
Forecast	Forest organizations that harvest in relation to their allocation of the allowable annual cut provide employment and taxation revenue to local communities.
Target	Maintain levels of direct and indirect employment using 5 year rolling average AAC * employment multiplier for direct, indirect, and induced employment. This is currently 0.97 jobs per 1000 m3.
Basis for the Target	Timber supply review employment coefficients.
Monitoring & Measurement Periodic	It is expected that the multiplier will be updated in conjunction with timber supply review which typically occurs every 10 years.
Annual	Report the allocated harvest level for each licence and for the DFA combined.
Variance	-10%

[12] Reference: Quesnel TSA – MFR Timber Supply Review Public Discussion Paper. 2010

Indicator	**5.2.4 Level of Aboriginal participation in the forest economy**
Indicator Statement(s)	5.2.4. # of opportunities for Aboriginals to participate in the forest economy
Element(s)	5.2 Communities and Sustainability
Value(s) and Objective(s)	Value 5.2: Timber and Non-Timber Benefits Objective 5.2: Provide opportunities for a feasible mix of timber, recreation, and non-timber commercial activities.
Strategy(s) 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.
Forecast Predicted Results or Outcome	There were 4 opportunities presented to Aboriginals to participate in the forest economy (2010 baseline data).
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 responsible stewards of public forest land, Canfor engages in building mutually beneficial relationships with Aboriginal peoples.
Target	Number of opportunities; three-year rolling average of ≥ 5.
Basis for the Target	Canfor engages in building mutually beneficial relationships with Aboriginal peoples. Target ties directly to Canfor's Sustainable Forest Management Commitments.
Monitoring & Measurement Periodic	
Annual	Report on the number of working relationships with applicable Aboriginals (partnerships, joint ventures, co-operative agreements, memorandums of understanding, or business contracts over $5,000 or over 500 cubic meters in volume) during the reporting year. Include opportunities by also reporting on contracts for work/services offered directly to Aboriginals that, for whatever reason, were declined. Performance is based on a three year rolling average. 2014 performance target is achieved if the 12/13/14 average is ≥ to the 11/12/13 average. Examples of a business contract include a specific work/service agreement or joint tenure arrangement with a First Nation Band or Aboriginal Contractor[13]. For consistency in reporting, multiple work agreements with one band or contractor or purchase agreements with one band or contractor are counted as a single business contract. For annual reporting, the information for the current year will be combined with the previous two years reporting, then averaged for the three years. Examples of working relationships will be provided to indicate possible trends in the types of these relationships.
Variance	-1

[13] Aboriginal Contractor is a company where one or more of the principles are of Aboriginal descent.

Indicator	**6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights**
Indicator Statement(s)	6.1.1. Employees will receive Aboriginal awareness training
Element(s)	6.1 Aboriginal and Treaty Rights
Value(s) and Objective(s)	Value 6.1: Aboriginal and Treaty Rights Objective 6.1: Ensure that aboriginal rights are understood and complied with.
Strategy(s) Description	Section 35 of the *Constitution Act* 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. 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. 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.
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 is to occur as part of training/orientation program for appropriate new employees. Refresher training to occur every 5 years or sooner if training materials or aboriginal law substantially changes.
Forecast Predicted Results or Outcome	As this is a new target, the 2011 Monitoring Report results will be used to establish the baseline data. Existing employees will receive aboriginal training or refresher training as required in the company's training matrix.
Forecast	Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local Aboriginals.
Target	100% of employees trained in Aboriginal awareness as outlined in the company's training matrix.
Basis for the Target	Legal obligations, communication process with First Nations and Métis. Sharing information and communication with First Nations and Métis on Forest Stewardship Plans supports the provincial government's legal obligation to consult with First Nations and Métis regarding Aboriginal rights and title. Canfor is committed to assisting the Crown in carrying out its duty to consult by sharing information and endeavouring to address concerns.
Monitoring & Measurement Periodic	
Annual	Utilize the employee training database to plan and record awareness training.. Report the number of active employees working within the DFA that have received the training within the past five years compared to the total number of employees required to have training as per the companies training matrix.
Variance	-10% to account for new employees that may not receive training immediately as outlined in the company's training matrix.

Indicator	**6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans**
Indicator Statement(s)	6.1.2. Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans
Element(s)	6.1 Aboriginal and Treaty Rights
Value(s) and Objective(s)	Value 6.1: Aboriginal and Treaty Rights Objective 6.1: Ensure that aboriginal rights are understood and complied with.
Strategy(s) Description	The first step toward respecting Aboriginal title and rights, and treaty rights is compliance with the law. Section 7.3.3 of the CSA Z809 Standard reinforces legal requirements for many reasons, including the reality that demonstrating respect for Aboriginal title and rights, and treaty rights can be challenging in Canada's fluid legislative landscape and therefore it is important to identify these legal requirements as a starting point. It is important for the organization to have an understanding of applicable Aboriginal title and rights, and treaty rights, as well as the Aboriginal interests that relate to the DFA. Open, respectful communication with local Aboriginal communities includes not only the organization understanding the Aboriginal rights and interests 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 agreeable. For the purpose of this indicator, "management plans" include Forest Stewardship Plans (major amendments), TFL Management Plans, Pest Management Plans, block information sharing, and SFM Plans. "Clear understanding" is very difficult to measure, but will be considered as part of the continuum of relationship building between licensees and Aboriginal communities, and will be a qualitative measure based on the summary of interests and concerns "Best Efforts" will consist of an initial attempt to contact by mail, a number of follow –up phone calls and an interest in meeting in person (if required).
Means of Achieving Objective & Target	Open, respectful communication of forest management plans with local Aboriginal.
Forecast Predicted Results or Outcome	In 2011, 100% of the management plans, where consultation was required (PMP in 2011), was referred to the affected Aboriginal communities, and multiple attempts to contact to review were made and recorded in the COPI database
Forecast	Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local Aboriginals.
Target	100% of management plans
Basis for the Target	Legal obligations, alignment with Canfor's Sustainable Forest Management Commitments
Monitoring & Measurement Periodic	
Annual	Retain a record of the Aboriginal communities whose traditional territory (any part) overlaps with the DFA for the purpose of communication with affected parties. Report the number of 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.
Variance	0%

Indicator	**6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur**
Indicator Statement(s)	6.1.3. % of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses
Element(s)	6.1 Aboriginal and Treaty Rights
Value(s) and Objective(s)	Value 6.1: Aboriginal and Treaty Rights Objective 6.1: Ensure that aboriginal rights are understood and complied with.
Strategy(s) 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 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. 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.
Means of Achieving Objective & Target	Efforts have been made to understand which Aboriginal 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.
Forecast Predicted Results or Outcome	100% of forest operations were in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses (2010 baseline data).
Forecast	Open and meaningful relationships with local First Nations leading to a trust in sharing sensitive information. Operational plans contain information on how these sites will be managed or protected. Forest operations that properly execute the site level plan.
Target	100% compliance with operational plans
Basis for the Target	Legal obligations, alignment with Canfor's Sustainable Forest Management Commitments
Monitoring & Measurement Periodic	
Annual	Number of roads constructed or cutblocks harvested where operational plans had specific content requirements to manage or protect Aboriginal forest values, knowledge and uses. Number of roads constructed or cutblocks harvested referenced above where plan requirements were followed.
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).

<table>
<tr><td>Indicator</td><td>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</td></tr>
<tr><td>Indicator Statement(s)</td><td>6.3.1. Primary and by-products that are bought, sold, or traded with other forest dependent businesses in the local area.</td></tr>
<tr><td>Element(s)</td><td>6.3 Forest Community Well-Being and Resilience</td></tr>
<tr><td>Value(s) and Objective(s)</td><td>Value 6.3: Forest Community Well Being and Resilience
Objective 6.3: Help to provide opportunities for economic diversification with the community.</td></tr>
<tr><td>Strategy(s)
Description</td><td>An economically and socially diverse community is often more sustainable in the long term with its ability to weather market downturns of a particular sector. Support of efforts to increase diversity, the establishment of other enterprises and co-operation with other forest-dependent businesses and forest users is desirable.
Support for local communities through business relationships (defined for this indicator as purchases, sales, and trading of primary forest products and forest by-products) provides employment diversification and increased local revenue. For the purposes of this target, a local contractor or supplier is defined as one that resides within or in the vicinity of the DFA.</td></tr>
<tr><td>Means of Achieving Objective & Target</td><td>Canfor seeks and maintains active, mutually beneficial business relationships (purchases, sales, 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, and hog fuel.</td></tr>
<tr><td>Forecast
Predicted Results or Outcome</td><td>The Table below shows primary and by-products that are bought, sold, or traded with other forest dependent businesses in the local area (2010 baseline data).

<table>
<tr><th colspan="2">Summary of Primary and by-products that are bought, sold, or traded with other forest dependent businesses in the local area</th></tr>
<tr><th>Product Type</th><th>Business</th></tr>
<tr><td>Log Sales:</td><td>Dunkley Lumber Ltd
West Fraser Timber Co. Ltd</td></tr>
<tr><td>Chips:</td><td>Canfor Pulp Limited Partnership</td></tr>
<tr><td>Hog:</td><td>Canfor Pulp Limited Partnership</td></tr>
<tr><td>Sawdust/Shavings:</td><td>West Fraser Timber Co. Ltd</td></tr>
<tr><td>Total:</td><td>5</td></tr>
</table>
</td></tr>
<tr><td>Forecast</td><td>Support for local communities through business relationships provides employment diversification and increased local revenue.</td></tr>
<tr><td>Target</td><td>5 purchase/sale/trade relationships per year</td></tr>
<tr><td>Basis for the Target</td><td>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.</td></tr>
<tr><td>Monitoring & Measurement
Periodic</td><td></td></tr>
<tr><td>Annual</td><td>Report on the number of purchase, sale or trade relationships with other forest dependant businesses within or in the vicinity of the DFA. Tracking is the number of relationships, not the number of transactions within each relationship.
Report: Number of relationships for primary forest products and by-products.</td></tr>
<tr><td>Variance</td><td>2</td></tr>
</table>

Indicator(s)	**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**
Indicator Statement(s)	6.3.2. Implementation and maintenance of certified safety program
Element(s)	6.3 Forest Community Well-Being and Resilience
Value(s) and Objective(s)	Value 6.3: Forest Community Well Being and Resilience Objective 6.3: Help to provide opportunities for economic diversification with the community.
Strategy(s) Description	Canfor's first measure of success is the health and safety of its 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 operations. Canfor implements their safety program by assigning responsibilities to managers, supervisors and to employees as follows: Management: • Develop and maintain a comprehensive occupational health and safety program • Conduct regular health and safety audits and implement appropriate action steps • Facilitate active employee participation in health and safety initiatives and programs • Provide the necessary education and training in safe work practices and procedures for supervisors, OH&S committee members, and all employees Supervisors: • Ensure that all employees under their direction receive proper training and instruction and that all work is performed safely • Ensure that employees are made aware of all known or reasonably foreseeable health or safety hazards in the areas where they work • Initiate actions and follow-up in order to maintain a healthy and safe working environment within their areas of responsibility Employees: • Take responsibility for avoiding risk to themselves and others and following all known safe work rules, procedures and instructions • Eliminate all accidents by working together to identify any potential hazards in the workplace and to take the appropriate corrective action 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, Partners in Injury Reduction (PIR) in Alberta.
Means of Achieving Objective & Target	Forest operations retain their safety program certification.
Forecast Predicted Results or Outcome	Forest organizations who safely execute their work assignments. The company's safety program was initially third party certified in 2009. Canfor-Quesnel woodlands maintained certification to the SAFE standard (2010 baseline data).
Forecast	From 1998 to 2005, WorkSafe BC accepted an average of nearly 22 harvesting fatality claims each year — the worst in 2005 with 34 claims. But the industry averaged fewer than 14 fatalities from 2006 to 2008. 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.
Target	100%
Basis for the Target	Continuously improve forest worker safety record.
Monitoring & Measurement Periodic	
Annual	Report a yes/no as to whether the operation has retained certification of its safety program.
Variance	None

Indicator	**6.4.1 Level of participant satisfaction with the public participation process**
Indicator Statement(s)	6.4.1. PAG established and maintained according to Terms of Reference
Element(s)	6.4 Fair and Effective Decision-Making
Value(s) and Objective(s)	Value 6.4: Fair and Effective Decision Making Objective 6.4: Ensure that the SFM public participation process is functioning.
Strategy(s) Description	The North Cariboo Sustainable Forest Advisors (NCSFA) was established to assist Canfor in developing the SFM Plan in part by identifying local values, objectives, indicators and targets. The SFM Plan is an evolving document that will be reviewed for effectiveness and revised as needed with the assistance of the NCSFA to address changes in forest condition and local community values. Ensuring the continuing interest and participation of the NCSFA 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 participation.
Means of Achieving Objective & Target	Canfor provides all Advisory Group members, and interested public who have shown notable interest (written comments or SFM Plan meeting attendance) during the reporting period, a feedback form (survey) to assess their satisfaction with the process. The survey content and process will be that described in the Advisory Group's Terms of Reference. All survey questions will have a 1-5 scoring assessment (1 being poor or ineffective, 3 being generally satisfied and 5 being excellent or highly effective).
Forecast Predicted Results or Outcome	The North Cariboo Sustainable Forest Advisors did not respond to any satisfaction surveys in 2009 or 2010. The new PAG Satisfaction survey form will be introduced to the PAG in 2012 and reported in the next Annual Report.
Forecast	Active, engaged Public Advisory Group.
Target	80% satisfaction from surveys
Basis for the Target	Ensure issues are identified discussed and where possible, resolved. Advisory Group process is being continuously improved.
Monitoring & Measurement Periodic	
Annual	Survey to be sent out only to those public members that submitted written comments or attended one of the meetings in the previous reporting period. • Survey responses coded 1 (poor), 2, 3 (satisfactory), 4, 5 (well done) Results of feedback form compiled and reported as part of annual monitoring program.
Variance	-10%

Indicator	**6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general**
Indicator Statement(s)	6.4.2. Number of educational opportunities for information/training that are delivered to the PAG and/or public
Element(s)	6.4 Fair and Effective Decision-Making
Value(s) and Objective(s)	Value 6.4: Fair and Effective Decision Making Objective 6.4: Ensure that the SFM public participation process is functioning.
Strategy(s) Description	The ability of people to share information, discuss and solve problems, and set and meet objectives is key to achieving and maintaining meaningful participation. Many types of capacity development initiatives can be used to help promote meaningful participation. This indicator and target recognizes the importance of providing informational or training opportunities for members of the public advisory group that in turn contributes to a more knowledgeable and effective PAG. Members of the public provide local knowledge that contributes to socially and environmentally responsible forest management. At times, public members may feel limited in their ability to contribute to discussions because they lack the technical forestry knowledge. Broadening this knowledge enables better dialogue and helps contribute to balanced decisions and an SFM Plan acceptable to the majority of public. A few of the many examples of educational opportunities would include field trips and guest presentations on a particular topic.
Means of Achieving Objective & Target	Canfor is committed to work with members of the public advisory group on forest management issues and to improve the effectiveness of public processes. Canfor will provide informational/educational opportunities for PAG participants on an annual basis as part of regularly held meetings.
Forecast Predicted Results or Outcome	2010 baseline data: • 1 PAG –The North Cariboo Sustainable Forest Advisors were active through 2010. • 2010 Annual Report • FSP open house – No FSP review required in 2010 • 1 public communication strategy – The strategy was developed in 2005
Forecast	Public participation in forest planning and operations that is open, inclusive and responsive to public concerns and grounded in science.
Target	>= 1
Basis for the Target	Additional knowledge provides for better dialogue and better ultimately better decisions.
Monitoring & Measurement Periodic	
Annual	Report the number of educational opportunities that were presented to the public advisory group. PAG meeting minutes contain supporting documentation.
Variance	0

<table>
<tr><td>Indicator</td><td>6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities</td></tr>
<tr><td>Indicator Statement(s)</td><td>6.4.3. Evidence of best efforts to obtain meaningful participation and input from Aboriginal communities</td></tr>
<tr><td>Element(s)</td><td>6.4 Fair and Effective Decision-Making</td></tr>
<tr><td>Value(s) and Objective(s)</td><td>Value 6.4: Fair and Effective Decision Making
Objective 6.4: Ensure that the SFM public participation process is functioning.</td></tr>
<tr><td>Strategy(s)
Description</td><td>Open, respectful communication with local Aboriginals includes not only the organization understanding the Aboriginal rights and interests 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 agreeable.</td></tr>
<tr><td>Means of Achieving Objective & Target</td><td>Open, respectful communication of forest management plans with local Aboriginals.</td></tr>
<tr><td>Forecast
Predicted Results or Outcome</td><td>From 2010 to 2012 the following efforts were made in relation to gaining participation:

Canfor has provided all First Nations with copies of the planned cutblock and road locations on an ongoing basis in an effort to identify any specific values or uses in the area to be considered in the development of the block. This is done for 100% of the blocks in each of their interest areas. Response from First Nations varies in this process from no response to some interest. There have been no specific interests identified in this time period that required special management consideration. This information sharing process is in addition to the specific opportunities listed below:

Alexandria
<table>
<tr><th>Date</th><th>Details</th><th>Response</th></tr>
<tr><td>Jun 21, 2010</td><td>Summer 2010 harvest notifications sent with offer to meet to review</td><td>None</td></tr>
<tr><td>Jan 20, 2011</td><td>Sent copy of proposed PMP and offer to meet</td><td>None</td></tr>
<tr><td>Mar 29, 2011</td><td>Left message to offer to meet</td><td>None</td></tr>
<tr><td>Mar 11, 2011</td><td>Left message to offer to meet</td><td>None</td></tr>
<tr><td>May 17, 2011</td><td>Summer 2011 harvest notifications sent with offer to meet to review</td><td>None</td></tr>
<tr><td>Nov 17, 2011</td><td>Winter 2012 harvest notifications sent with offer to meet to review</td><td>None</td></tr>
<tr><td>May 3, 2012</td><td>Draft FSP was sent, with an offer to meet to review</td><td>None</td></tr>
</table></td></tr>
</table>

Forecast

Predicted Results or Outcome

Kluskus

In addition to the specific events listed below, Canfor has acted as a partner with Kluskus providing the service of reviewing and commenting on other licensee's information sharing packages. In addition Canfor has provided support and advice on a number of forestry related issues for Kluskus

Date	Details	Response
Jun 21, 2010	Summer 2010 harvest notifications sent with offer to meet to review	None
Jan 20, 2011	Sent copy of proposed PMP and offer to meet	None
Mar 11, 2011	Spoke with Kluskus about PMP	No concerns with PMP
May 17, 2011	Summer 2011 harvest notifications sent with offer to meet to review	None
Sep 8, 2011	Attended a Kluksus community meeting. Went over Canfor's plans in their interest area.	Some block specific comments were received from individuals.
Nov 17, 2011	Winter 2012 harvest notifications sent with offer to meet to review	None
May 3, 2012	Draft FSP was sent, with an offer to meet to review	None

Red Bluff

Date	Details	Response
Jun 21, 2010	Summer 2010 harvest notifications sent with offer to meet to review	None
Jan 20, 2011	Sent copy of proposed PMP and offer to meet	None
Mar 11, 2011	Left message to offer to meet	None
Mar 29, 2011	Left message to offer to meet	None
May 17, 2011	Summer 2011 harvest notifications sent with offer to meet to review	None
Nov 17, 2011	Winter 2012 harvest notifications sent with offer to meet to review	None
May 3, 2012	Draft FSP was sent, with an offer to meet to review	None

<table>
<tr><td>Forecast
Predicted Results or Outcome</td><td>Nazko
<table>
<tr><th>Date</th><th>Details</th><th>Response</th></tr>
<tr><td>Jun 21, 2010</td><td>Summer 2010 harvest notifications sent with offer to meet to review</td><td>None</td></tr>
<tr><td>Jan 20, 2011</td><td>Sent copy of proposed PMP and offer to meet</td><td>None</td></tr>
<tr><td>Mar 11, 2011</td><td>Left message to offer to meet</td><td>None</td></tr>
<tr><td>Mar 29, 2011</td><td>Left message to offer to meet</td><td>None</td></tr>
<tr><td>May 17, 2011</td><td>Summer 2011 harvest notifications sent with offer to meet to review</td><td>None</td></tr>
<tr><td>Nov 17, 2011</td><td>Winter 2012 harvest notifications sent with offer to meet to review</td><td>None</td></tr>
<tr><td>May 3, 2012</td><td>Draft FSP was sent, with an offer to meet to review</td><td>None</td></tr>
</table></td></tr>
<tr><td>Forecast</td><td>Forest operations that respect Aboriginal title and rights and reflect the timber and non-timber interests of local Aboriginals.</td></tr>
<tr><td>Target</td><td>Report on efforts</td></tr>
<tr><td>Basis for the Target</td><td>Legal obligations, alignment with Sustainable Forest Management Commitments.</td></tr>
<tr><td>Monitoring & Measurement
Periodic</td><td></td></tr>
<tr><td>Annual</td><td>Retain a record of the Aboriginal communities whose traditional territory (any part) overlaps with the DFA for the purpose of communication with affected parties.
Report the number of 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.</td></tr>
<tr><td>Variance</td><td>0%</td></tr>
</table>

Indicator	**6.5.1 Number of people reached through educational outreach**
Indicator Statement(s)	6.5.1. The number of people to whom educational opportunities provided.
Element(s)	6.5 Information for Decision-Making
Value(s) and Objective(s)	Value 6.5: Information for Decision-Making Objective 6.5: Help educate interested parties and increase knowledge of ecosystem function and human interactions with forest ecosystems to support their involvement in the public participation process.
Strategy(s) 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 and 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.
Means of Achieving Objective & Target	Canfor maintains its involvement in educational outreach initiatives (e.g., maintaining an open and active public advisory group, hosting field tours and open houses, notification/referrals to stakeholders, school classroom visits). Record attendance level at each meeting or tour (public and stakeholders).
Forecast Predicted Results or Outcome	In 2011, Canfor participated in several initiatives. One was participation in the Gavin Lake Forestry Camp, which provided opportunities for 80 kids. Further an SFM open house was set up in the local mall, and an estimated 100 people stopped in, with about 30 of them having a meaningful one on one conversation about forestry.
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.
Target	50
Basis for the Target	Aligns with Canfor's Sustainable Forest Management Commitments.
Monitoring & Measurement Periodic	
Annual	Track and report the number of people that participated in educational opportunities.
Variance	-10

Indicator	**6.5.2 Availability of summary information on issues of concern to the public**
Indicator Statement(s)	6.5.2. SFM monitoring report made available to the public
Element(s)	6.5 Information for Decision-Making
Value(s) and Objective(s)	Value 6.5: Information for Decision-Making Objective 6.5: Help educate interested parties and increase knowledge of ecosystem function and human interactions with forest ecosystems to support their involvement in the public participation process.
Strategy(s) Description	This target recognizes the importance of keeping members of the public informed on forestry strategies being developed and planning occurring in their area. 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 of the SFM Plan. 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. Opportunity for the public to respond. Members of the public can provide local knowledge that contributes to socially and environmentally responsible forest management.
Means of Achieving Objective & Target	Canfor maintains a website that makes the SFM monitoring report publicly available: http://www.canfor.com/sustainability/certification/csa.asp
Forecast Predicted Results or Outcome	An external website containing the annual SFM monitoring report is maintained (2010 baseline data). http://canfor.com/sustainability/certification/csa.asp
Forecast	Public awareness and understanding of the SFM Plan and annual performance against the Plan's targets. A continuously improving SFM Plan that has openly informed included and responded to the public.
Target	SFM monitoring report available to public annually via web
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.
Monitoring & Measurement Periodic	
Annual	Report a yes/no answer as to whether the annual monitoring report was made publically available on an external website.
Variance	None

6.0 LINKS TO OTHER PLANNING PROCESSES

6.1 Strategic Plans

Cariboo-Chilcotin Land Use Plan (CCLUP)

The Government of British Columbia announced the Cariboo-Chilcotin Land Use Plan (CCLUP) on October 24, 1994 . The CCLUP 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 Cariboo-Chilcotin. The stability and security provided by the plan provides economic and social stability and increased opportunities for growth and investment throughout the region.

The CCLUP was designated as a higher level plan in 1995 under the Forest Practices Code of British Columbia Act. It was later amended in 1999. The CCLUP guided the application of the Forest Practices Code and other resource management activities within the plan area. The Forest Practices Code was subsequently replaced with the Forest and Range Practices Act (FRPA) but the CCLUP higher level plan was retained under this new legislation.

A key part of implementing the CCLUP was the completion of Sustainable Resource Management Plans (SRMPs). Seven Sustainable Resource Management Planning areas covering the entire Cariboo Chilcotin have been completed. Sustainable Resource Management Plans address CCLUP strategies and targets on an area-specific basis, and provide detailed objectives and strategies for the management of natural resources and the maintenance of environmental values.

A land use order has been declared by ILMB under the Land Use Objectives Regulation which sets legal direction for forestry activities under FRPA with respect to key resource values from the SRMPs. The order contains objectives and maps for a number of important resources including, biodiversity, old growth, critical habitat for fish, community areas of special concern, lakes, riparian, mature birch retention, grasslands, scenic areas, trails, high value wetlands for moose and grizzly. New Forest Stewardship Plans (FSPs) must comply with the order immediately. Holders of existing FSPs must amend their plans within two years of declaration of the land use order. Copies of the order and all relevant maps are available at: ftp://ftp.geobc.gov.bc.ca/publish/Regional/WilliamsLake/Cariboo-Chilcotin_LUOR_Order.

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). 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 System

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.

LIST OF ACRONYMS

AAC: Allowable Annual Cut
ATV: All Terrain Vehicle
BCTS: BC Timber Sales
BEC: Biogeoclimatic Ecosystem Classification
BMP: Best Management Practice
CCLUP: Cariboo-Chilcotin Land Use Plan
CLA: Conservation Legacy Area
COSEWIC: Committee on the Status of Endangered Wildlife in Canada
CWD: Coarse Woody Debris
CSA: Canadian Standards Association
DFA: Defined Forest Area
ECA: Equivalent Clearcut Area
EMS: Environmental Management System
FDP: Forest Development Plan
FMLB: Forest Management Land Base
FREP: Forest and Range Evaluation Program
FRPA: Forest and Range Practices Act
FSP: Forest Stewardship Plan
ILMB: Integrated Land Management Bureau
ISO: International Organization for Standardization
IWMS: Identified Wildlife Management Strategy
LU: Landscape Unit
MFLNRO: BC Ministry of Forests, Lands and Natural Resource Operations
MPB: Mountain Pine Beetle
NCSFA: North Cariboo Sustainable Forest Advisors
NDT: Natural Disturbance Type
NDT3: ecosystems with frequent stand-initiating events
NHLB: Non – Harvestable Land Base
NPUNN: Non productive Unnatural disturbance (roads, landings)
NRFL: Non-Replaceable Forest License
OGMA: Old Growth Management Area
OH&S: Occupational Health & Safety
PAG: Public Advisory Group
PAS: Protected Area Strategy
PEM: Predictive Ecosystem Mapping
PIR: Partners in Injury Reduction
SARA: Federal Species at Risk Act
SFM: Sustainable Forest Management
SFMP: Sustainable Forest Management Plan
SP: Site Plan
SRMP: Sustainable Resource Management Plan
THLB: Timber Harvesting Land Base
TOR: Terms of Reference
TSA: Timber Supply Area
TSR: Timber Supply Review
WTP: Wildlife Tree Patch

GLOSSARY

Aboriginal: "Aboriginal peoples of Canada, which includes Indian, Inuit and Métis peoples of Canada" (Constitution Act 1982).

Aboriginal Contractor: A company where one or more of the principles are of Aboriginal descent.

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

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

Adaptive Management: A learning approach to management that recognizes substantial uncertainties in managing forests and incorporates into decisions the experience gained from the results of previous actions. Adaptive management rigorously combines management, research, monitoring, and means of changing practices so that credible information is gained and management activities are modified by experience.

Age Class: Any interval into which the age range of trees, forests, stands, or forest types is divided for classification. Forest inventories commonly group trees into 20-year age classes.

Annual Allowable Cut (AAC): The allowable rate of timber harvest from a specified area of land. The Chief Forester sets specific AACs for Timber Supply Areas and Tree Farm Licences in accordance with Section 8 of the *Forest Act*.

Best Management Practice (BMP): A forestry practice or combination of practices determined to be the most practicable means of protecting and conserving forest resources and forest land productivity, now and into the future. BMP are often developed for Forest Roads, Stream Crossings, Riparian Management Zones, handling fuels, lubricants and trash, and others.

Biodiversity: the degree of variation of life forms within a given ecosystem, biome, or an entire planet.

Biogeoclimatic Ecosystem Classification (BEC): A hierarchical system of ecosystems that integrates regional, local and chronological factors and combines climatic, vegetation and site factors. The following BEC zones are within the Vanderhoof Forest District:

- ESSF – Engelmann Spruce-Sub Alpine Fir
- SBPS – Sub-Boreal Pine Spruce
- SBS – Sub-Boreal Spruce

Subzones further refine the zones and are based on precipitation and temperature. Examples include: mc – moist, cold; mv – moist, very cold; dk – dry, cool; dw – dry,warm; xv – very dry, very cold. Each subzone can be furthered refined by variants. A variant reflects further difference in regional climate.
Also see Site Series.

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

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

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 CO2 emissions.

Catastrophic Event: detrimental soil productivity loss lasting approximately 10 years post event.

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.

Conserve: Keep from harm or damage.

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.

Customary Use Rights: Refers to uses which are not legally established through treaties but have been identified through written documents e.g. the District Manager identifies First Nation berry picking area for special management.
Damaging Agents: Must be significant, such as those that would affect AAC or plantation success.

DBH (diameter at breast height): The stem diameter of a tree measured at breast height, 1.3 metres above the ground.

Defined Forest Area (DFA): A specified area of forest, including land and water. The Defined Forest Area for Canfor's operating area within the Quesnel TSA as denoted on the map dated November 2004.

Designated Official: A term commonly used to refer to a person designated by name or title to be a designated energy, mines and petroleum resources official, designated environment official, or designated forest official.

Ecosystem: A dynamic complex of plants, animals and micro-organisms and their non-living environment interacting as a functioning unit.

Edge Habitat: Habitat conditions, such as degree of humidity and exposure to light or wind, created at or near the boundary dividing ecosystems, for example, between open areas and adjacent forest.

Effectiveness Monitoring Plan (wildlife): The purpose of an effectiveness monitoring plan is to assess trends in wildlife populations related to their habitat to meet SFMP indicator goal(s). Components of an effectiveness monitoring plan include: goals, current information, conceptual model, indicators & measures, sampling design, analysis, and implementation. Those wishing more detailed information on general effectiveness monitoring should review "The strategy and design of effectiveness monitoring program for the Northwest Forrest Plan" USDA General Technical report PNW-GTR-437, January 1999.

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

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

Forest and Range Practices Act (FRPA): The *Forest and Range Practices Act* brings in the application of a results-based system for the management of forest and range resources. It will fully replace the *Forest Practices Code of British Columbia Act* by December, 2005.

Facilitate Capacity Building: To increase public knowledge of forestry terms, practices and values. Also to increase resource manager's local knowledge of forest values from the public.

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

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

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.

Guilds: A group of species using environmental resources in a similar way (e.g.; nectar feeding insects).

Habitat Types: See Coarse-filter Ecosystem Group.

Heterogeneous/Heterogeneity: diverse in character, varied in content (diversity).

Inoperable: Lands that are unsuited for timber production now and in the foreseeable future because of a range of factors including: elevation; topography; inaccessible location; low value of timber; small size of timber stands; and steep or unstable soils that cannot be harvested without serious and irreversible damage to the soil or water resources. Inoperable lands may also be designated as parks, wilderness areas, or other uses incompatible with timber production.

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

Known: Used to describe a feature, objective or other thing that is (a) contained in a higher level plan, or (b) otherwise made available by the district manager at least four months before the operational plan is submitted for approval.

Landscape unit: For the purpose of the forest practices code, landscape units are planning areas delineated on the basis of topographic or geographic features. Typically they cover a watershed or series of watersheds, and range in size from 5000 to 100 000 ha.

Landslide: Includes a wide range of ground movement, such as rock falls, deep failure of slopes, and shallow debris flows. For the purpose of the SFMP landslides will be defined as the mass movement of soil or debris covering an area at least 0.10 hectare in size.

Live Tree: Any living tree of a merchantable size. General merchantability standards are 12.5 cm at dbh for pine and 17.5 dbh for spruce and fir.

Local: For the purposes of this process, "local" is defined as being within the Quesnel District.

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

Long Run Sustained Yield (LRSY): For any Timber Supply Area, the LRSY is equal to the culmination of mean annual increment weighted by area for all productive and utilizable forest land types in that TSA including all stands classified as Not Satisfactorily Restocked (NSR), Disturbed—Stocking Doubtful and potentially usable non-commercial cover.

Managed Forest Land: Forest land that is being managed under a forest management plan utilizing the science of forestry.

Merchantable Timber: a tree or stand that has attained sufficient size, quality and/or volume to make it suitable for harvesting.

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

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

NAR: Net Area to Reforest.

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.

Nitrogen Cycle: The movement of nitrogen in its many forms between the hydrosphere, lithosphere, atmosphere and biosphere.

North Central Interior: The landbase that includes communities from 100 Mile House to Fort St. John (south to north) and Terrace to Valemount (west to east).

Opportunity THLB: Currently inoperable forests in the Timber Harvesting Land Base that may become operable in the future due to current factors that may be mitigated, such as developed access or a minimum tree diameter to improve the economic feasibility of harvesting.

Over Time: The change from now moving forward in time and includes short-term ($\leq$ 20 years), mid-term (>20 years and less than one rotation $\geq$ 100 years), and long-term (> one rotation).

Patch: A particular unit with identifiable boundaries and different vegetation from its surroundings.

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: 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.

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.

Plant Diversity Index: A diversity index is a mathematical measure of species diversity in a community. Diversity indices provide more information about community composition than simply species richness (i.e. the number of species present); they also take the relative abundances of different species into account. Diversity indices provide important information about rarity and commonness of species in a community.

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.

Primitive Recreation: Part of the Recreation Opportunity Spectrum. Area is characterized by an essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.

Productive Capability: The current and future ability of forest ecosystems to produce biomass.

Productivity: The natural ability of a forest ecosystem to capture energy, support life forms, and produce goods and services.

Public: The people as a whole within a defined area (i.e. community, forest district). At its broadest sense public means everyone anyone in the world and to narrowest sense public might be considered as the people living on your street.

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

Recreation Opportunity Spectrum objectives: resource management objectives in approved integrated resource management plans, reflecting the desired Recreation Opportunity Spectrum setting to provide for specific types of recreation opportunities and experiences.

Regeneration delay: the time allowed in a prescription between the start of harvesting in the area 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. There is a maximum permissible time allowed and comes from standards developed and/or approved by government.

Resident: A member of the public who has resided within a defined area (i.e. community, forest district, defined forest area) for more than 6 months.

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.

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.

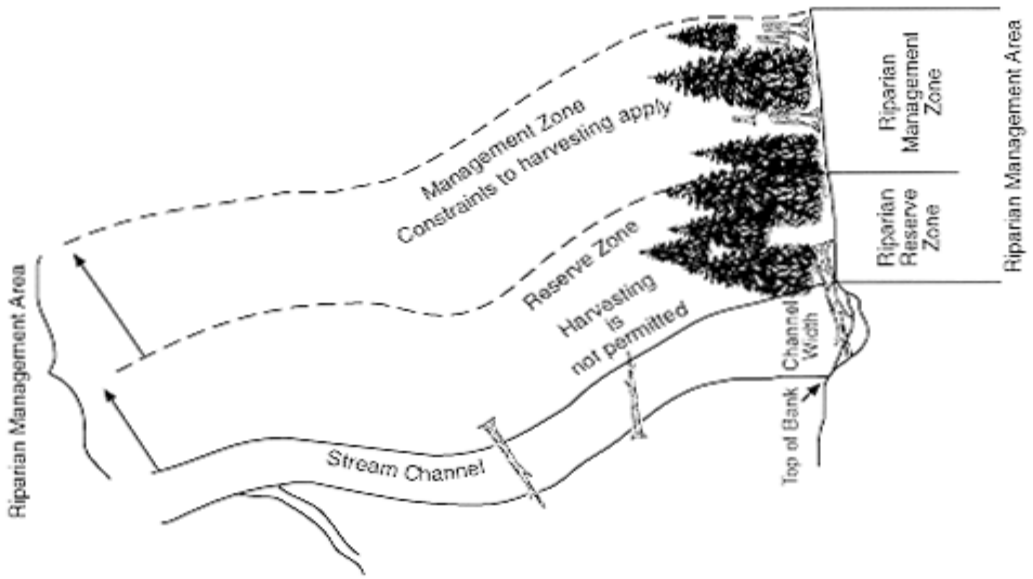


Figure 1. Riparian management area showing a management zone and a reserve zone. Source: Riparian Management Area Guidebook 1995.

Road 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.

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.

Semi-Primitive Recreation: Part of the *Recreation Opportunity Spectrum*. There is motorized and non-motorized. Semi-primitive motorized is an area characterized by predominantly natural or natural appearing environment of moderate to large size. Use of local, primitive, or collector roads with predominantly natural surfaces and trails suitable for motorbikes is permitted. Non-motorized is an area characterized by a predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. Motorized recreation use is not permitted, but local roads used for other resource management may be present on a limited basis.

Seral Stage: Any stage of development of an ecosystem, from a disturbed, unvegetated state (early-seral) to a mature plant community (late-seral).

Shannon-Wiener Index: The Shannon-Wiener index for a plant community is derived using the following equation:

$$\mathbf{H} = - \sum_{i=1}^{s} (p_i)(\ln p_i)$$

where: H = index of species diversity
S = number of species
p_i = proportion of total sample belonging to the ith species
ln = natural log[14]

Due to its logarithmic nature, the Shannon-Wiener Index is sensitive to uncommon plant species and less sensitive to very common species. More value is given to the presence of each species than is given to the abundance of each species.

Significant Natural Disturbance Event: defined as an area of disturbance greater than 500ha.

Simpson's Index: The Simpson's index values range between 0 and 1. The closer to 0 the value is, the more diverse the plant species is. If only one plant species is found then the Simpson's index would be 1. Simpson's index is calculated as follows:

$$SI = \sum_{i=1}^{S} p_i^2$$

where: *SI = Simpson's index of plant species diversity*
S = number of plant species
pi = proportion of total sample belonging to the ith plant species

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, …).

[14] Any base of logarithms can be used for this index, as they are convertible to one another by a constant multiplier (Krebs, 1989).

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 Guild: a group of species that use a habitat type. Habitat Type- such as riparian, forest, hardwoods.

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

Stewardship: The science, art and skill of responsible and accountable management of resources.

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

Stumpage: The fee that individuals and firms are required to pay the government for harvesting Crown timber in British Columbia. Stumpage is determined through a complex appraisal of each stand or area of trees that will be harvested for a given timber mark. A stumpage rate ($ per m^3) is determined and applied to the volume of timber that is cut, and the individual or firm is invoiced by the Ministry of Forests.

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"[15]

SFMP: Sustainable forest management plan.

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

Terrestrial Ecosystem Mapping (TEM): Terrestrial Ecosystem Mapping is a process of dividing landscapes into ecological units that differ from one another with respect to climate, geomorphology, bedrock geology and vegetation. In British Columbia, a total of four classifications are typically mapped, including: ecoregions, biogeoclimatic units, ecosystem units (site series), and seral community types (structural stage). Ecosystem units are delineated on aerial photographs using biophysical criteria and are confirmed through field sampling. In

[15] *The State of Canada's Forests* 2001/2002, as cited by the CSA.

Alberta, forest cover and other landscape information, augmented by extensive ground sampling, is used to produce ecosystem unit maps (ecosites) within natural subregions.

Timber Harvesting 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.

Timely: Within one month following inquiry.

Visual Landscape Inventory: the identification, classification, and recording of the location and quality of visual resources and values.

Visual Quality Objective (VQO): 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** – No visible timber harvesting activity. **Retention** – Timber harvesting activities are not visually evident. **Partial Retention** – Activities are visual, but remain subordinate. **Modification** – Activities are visually dominant, but have characteristics that appear natural. **Maximum Modification** -- Activities are dominant and out of scale, but appear natural in the background.

Visually Sensitive Areas: Viewsheds that are visible from communities, public use areas, and travel corridors, including roadways and waterways, and any other viewpoint so identified through referral or planning processes.

Unmerchantable: of a tree or stand that has not attained sufficient size, quality and/or volume to make it suitable for harvesting.

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

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

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

Water Cycle (also known as the hydrologic cycle): The journey water takes as it circulates from the land to the sky and back again.

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 from CSA Standard	CFP Indicator	Target
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	Ecosystem Diversity	Maintain the diversity and pattern of communities and ecosystems within a natural range.	1.1.1 Ecosystem area by type	Percent representation of ecosystem groups across the DFA. A group would be defined down to the BEC variant level (i.e. SBSmw1)	Rare Ecosystems groups will not be harvested; Uncommon ecosystem groups will have specific management strategies
				1.1.2 Forest area by type or species composition	Percent distribution between forest types (treed conifer, treed broad leaf, treed mixed) >20 years old across DFA	Maintain the baseline distribution between forest types
				1.1.3 Forest area by seral stage or age class	Percent late seral forest area by ecological unit across the DFA. Late Seral is defined as a stand over a certain age. This age varies by landscape unit and eco unit.	Maintain amount of area consistent with the CCLUP
				1.1.4 Degree of within-stand structural retention	Percent of stand structure retained across the DFA in harvested areas	DFA target 7% for CFP Blocks
					Percent of blocks meeting dispersed retention levels as prescribed in the site plan/logging plan	100%
					Number of non-conformance where forest operations are not consistent with riparian management requirements as identified in operation plans.	0%

CCFM Criterion	CSA Element	Value	Objective	Core Indicator from CSA Standard	CFP Indicator	Target
	1.2 Species Diversity Conserve species diversity by ensuring that habitats for the native species found in the DFA are maintained through time, including habitats for known occurrences of species at risk	Species Richness	Maintain suitable habitat for indicator species.	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. (This includes at risk species as well as other focal species whose habitiat may be impacted by forestry activities)	100% conformance with management strategies
				1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk		
				1.2.3 Proportion of regeneration comprised of native species	Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use	Annually, 100% conformance with the standards
	1.3 Genetic Diversity Conserve genetic diversity by maintaining the variation of genes within species and ensuring that reforestation programs are free of genetically modified organisms	Genetic Diversity	Conserve the genetic diversity found naturally within trees	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*	(duplicate) Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use	Annually, 100% conformance with the standards

CCFM Criterion	CSA Element	Value	Objective	Core Indicator from CSA Standard	CFP Indicator	Target
	1.4 Protected Areas and Sites of Special Biological and Cultural Significance Respect protected areas identified through government processes. Cooperate in broader landscape management related to protected areas and sites of special biological and cultural significance. Identify sites of special geological, biological, or cultural significance within the DFA and implement management strategies appropriate to their long-term maintenance	Protected Areas and Sites of Special Biological and Cultural Significance.	To maintain representative areas of naturally occurring and important ecosystems, rare physical environments and sites of cultural significance	1.4.1 Proportion of identified sites with implemented management strategies	Percent of forest management activities consistent with management strategies for protected areas and natural sites of significance (geological, biological)	100%
				1.4.2 Protection of identified sacred and culturally important sites	% of identified cultural forest values, knowledge and uses considered in forestry planning processes	100%

CCFM Criterion	CSA Element	Value	Objective	Core Indicator from CSA Standard	CFP Indicator	Target
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	Ecosystem Resilience	Maintain a natural range of variability in ecosystem function, composition, and structure which will allow ecosystems to recover from disturbance and stress	2.1.1 Reforestation success	Average Regeneration delay for stands established annually	Regeneration established in 3 years or less
					Percent of harvested area achieving free growing by assessment dates	100%
	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	Forest Ecosystem Productivity	Maintain ecosystem productive capacity by ensuring ecosystem conditions are maintained that are capable of supporting naturally occurring species.	2.2.1 Additions and deletions to the forest area	Percent of gross forested land base in the DFA converted to non-forest land use through forest management activities	Less than 3% of gross forested land base
				2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested	% of volume harvested compared to the allocated level	100% over the cut control period as defined by timber supply forecast harvest flow
3. Soil and Water Conserve soil and water resources by maintaining their quantity and quality in forest ecosystems	**3.1 Soil Quality and Quantity** Conserve soil resources by maintaining soil quality and quantity	Soil Productivity	Protect soil resources to sustain productive forests	3.1.1 Level of soil disturbance	% of harvested blocks meeting soil disturbance objectives identified in plans (FSP, SP)	100% of blocks meet soil disturbance objectives
				3.1.2 Level of downed woody debris	Percent of audited cutblocks where post harvest CWD levels are within the targets contained in Plans (FSP, SP)	100% of blocks audited annually will meet targets
	3.2 Water Quality and Quantity Conserve water resources by maintaining	Water Quantity and Quality	Maintain water quality and quantity	3.2.1 Proportion of watershed or water management areas	Sensitive watersheds that are above Peak Flow targets will have further assessment	100%

CCFM Criterion	CSA Element	Value	Objective	Core Indicator from CSA Standard	CFP Indicator	Target
	water quality and quantity			with recent stand-replacing disturbance	% of high hazard drainage structures in sensitive watersheds with identified water quality concerns that have mitigation strategies implemented	100%
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	Carbon Uptake and Storage	Maintain the carbon uptake and storage processes	4.1.1 Net carbon uptake	Maintain the retention of existing (or replacement of) old forest retention areas (contained in OGMA's, protected areas, WTP's, inoperable ground)	No net loss (+/- # ha's)
				2.1.1 Reforestation success	Average Regeneration delay for stands established annually	Regeneration established in 3 years or less
	4.2 Forest Land Conversion Protect forest lands from deforestation or conversion to non-forests, where ecologically appropriate	Forest Land base	Sustain forests lands within our control within the DFA	2.2.1 Additions and deletions to the forest area	Percent of gross forested land base in the DFA converted to non-forest land use through forest management activities	Less than 3% of gross forested land base
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	Timber and Non-Timber Benefits	Provide opportunities for a feasible mix of timber, recreation, and non-timber commercial activities	5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	% of volume harvested compared to the allocated level	100% over the cut control period as defined by timber supply forecast harvest flow
					Conformance with strategies for non-timber benefits identified in FSP, SP	No non-conformances with SP's
	5.2 Communities and Sustainability Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by	Sustainable and Viable Communities	Ensure continued investment in local communities through local spending, training of workers, ensuring worker	5.2.1 Level of investment in initiatives that contribute to community sustainability	Level Investment in local communities	Maintain % of dollars spent in local communities based on a 5 year rolling average

CCFM Criterion	CSA Element	Value	Objective	Core Indicator from CSA Standard	CFP Indicator	Target
	supporting local community economies		safety, and providing for local employment.	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
				5.2.3 Level of direct and indirect employment	Level of direct and indirect employment	Maintain levels of direct and indirect employment using 5 year rolling average AAC * employment multiplier
				5.2.4 Level of Aboriginal participation in the forest economy	# of opportunities for Aboriginals to participate in the forest economy	Maintain number of opportunities (multi-year rolling average)
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	Ensure that aboriginal rights are understood and complied with.	6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights	Employees will receive First Nations awareness training	100%
				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
				6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur	% of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses	100% compliance with operational plans

CCFM Criterion	CSA Element	Value	Objective	Core Indicator from CSA Standard	CFP Indicator	Target
	6.2 Respect for Aboriginal Forest Values, Knowledge, and Uses Respect traditional Aboriginal forest values, knowledge, and uses as identified through the Aboriginal input process	Aboriginal Forest Values and Uses	Respect known traditional aboriginal forest values and uses	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%
	6.3 Forest Community Well-Being and Resilience Encourage, co-operate with, or help to provide opportunities for economic diversity within the community	Forest Community Well Being and Resilience	Help to provide opportunities for economic diversification with the community	6.3.1 Evidence that the organization has co-operated with other forest-dependent businesses, forest users, and the local community to strengthen and diversify the local economy	Primary and by-products that are bought, sold, or traded with other local forest dependent businesses in the local area	Report out on a 5 year rolling trend of # of purchase/sale/trade relationships
				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 within Canfor	100%

CCFM Criterion	CSA Element	Value	Objective	Core Indicator from CSA Standard	CFP Indicator	Target
				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 within Canfor	100%
	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 and Effective Decision Making	Ensure that the SFM public participation process is functioning.	6.4.1 Level of participant satisfaction with the public participation process	PAG established and maintained according to Terms of Reference	80% satisfaction from surveys
				6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general	Number of educational opportunities for information/training that are delivered to the PAG and/or public	>= 1
				6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities	Evidence of best efforts to obtain meaningful participation and input from Aboriginal communities	Report on efforts
	6.5 Information for Decision-Making Provide relevant information and educational opportunities to interested parties to support	Information for Decision Making	Help educate interested parties and increase knowledge of ecosystem function and human	6.5.1 Number of people reached through educational outreach	The number of people to whom educational opportunities provided	50

CCFM Criterion	CSA Element	Value	Objective	Core Indicator from CSA Standard	CFP Indicator	Target
	their involvement in the public participation process, and increase knowledge of ecosystem processes and human interactions with forest ecosystems		interactions with forest ecosystems to support their involvement in the public participation process.	6.5.2 Availability of summary information on issues of concern to the public	SFM monitoring report made available to the public	SFM monitoring report available to public annually via web

APPENDIX 3 – SPECIES OF MANAGEMENT CONCERN

Wildlife Species

Species	IWMS	BC List	SARA	Species of Management Concern
American White Pelican		Red		
Woodland Caribou	Y	Blue	1	
Grizzly Bear	Y	Blue		x
Wolverine	Y	Blue		x
Long-billed Curlew	Y	Blue	1	
Western Toad		Blue	1	x
Great Blue Heron	Y	Blue		x
Short-eared Owl	Y	Blue	3	
Fisher	Y	Blue		x
American Bittern		Blue		
Surf Scoter		Blue		
Rusty Blackbird		Blue	1	
Rough-legged Hawk		Blue		
Bobolink		Blue		
Barn Swallow		Blue		
Townsends big-eared Bat		Blue		x
Olive Sided Flycatcher		Blue	1	x
Northern Myotis		Blue		x
Sandhill Crane	Y	Yellow		
Sharp-tailed Grouse	Y	Yellow		
Common Nighthawk		Yellow	1	

Plants

Species	BC List	Species of Management Concern
Stalked Moonwort	red	x
White Wintergreen	blue	x
Iceland Koenigia	blue	
Water Marigold	blue	
Marsh Muhly	blue	
Small-flowered Lousewort	blue	
Elegant Jacob's-ladder	blue	
Water Bur-reed	blue	
Blunt-sepaled Starwort	blue	

Plant Communities

Species	Species of Management Concern
Sxw / horsetails – western meadowrue (SBPSdc, xc)	x

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 provincially and federally listed species.

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

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

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

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. A group would be defined down to the BEC variant level (i.e. SBSmw1)	Rare Ecosystems groups will not be harvested; Uncommon ecosystem groups will have specific management strategies	a
1.1.2	Percent distribution between forest types (treed conifer, treed broad leaf, treed mixed) >20 years old across DFA	Maintain the baseline distribution between forest types	a
1.1.3	Percent late seral forest area by ecological unit across the DFA. Late Seral is defined as a stand over a certain age. This age varies by landscape unit and eco unit.	Maintain amount of area consistent with the CCLUP	b
1.1.4 a	Percent of stand structure retained across the DFA in harvested areas	DFA target 7% for Canfor Blocks	b

Indicator #	Indicator Statement	Target	Risk Rank Ref
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 operation plans.	0%	b
1.2.1	Percent of forest management activities consistent with management strategies for Species of Management Concern. (This includes at risk species as well as other focal species whose habitat may be impacted by forestry activities)	100% conformance with management strategies	b
1.2.3	Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use	Annually, 100% conformance with the standards	b
1.4.1	(duplicate) Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use	Annually, 100% conformance with the standards	b
1.4.2	Percent of forest management activities consistent with management strategies for protected areas and natural sites of significance (geological, biological)	100%	b
2.1.1 a	Average Regeneration delay for stands established annually	Regeneration established in 3 years or less	b
2.1.1 b	Percent of harvested area achieving free growing by assessment dates	100%	b
2.2.1	Percent of gross forested land base in the DFA converted to non-forest land use through forest management activities	Less than 3% of gross forested land base	a
2.2.2	% of volume harvested compared to the allocated level	100% over the cut control period as defined by timber supply forecast harvest flow	c
3.1.1	% of harvested blocks meeting soil disturbance objectives identified in plans (FSP, SP)	100% of blocks meet soil disturbance objectives	b
3.1.2	Percent of audited cutblocks where post harvest CWD levels are within the targets contained in Plans (FSP, SP)	100% of blocks audited annually will meet targets	b
3.2.1 a	Sensitive watersheds that are above Peak Flow targets will have further assessment	1	a

Indicator #	Indicator Statement	Target	Risk Rank Ref
3.2.1 b	% of high hazard drainage structures in sensitive watersheds with identified water quality concerns that have mitigation strategies implemented	100%	c
4.1.1	Maintain the retention of existing (or replacement of) old forest retention areas (contained in OGMA's, protected areas, WTP's, inoperable ground)	No net loss (+/- # ha's)	b
5.1.1	Conformance with strategies for non-timber benefits identified in FSP, SP	No non-conformances with SP's	b
5.2.1	Level Investment in local communities	Maintain % of dollars spent in local communities based on a 5 year rolling average	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	c
5.2.3	Level of direct and indirect employment	Maintain levels of direct and indirect employment using 5 year rolling average AAC * employment multiplier	c
5.2.4	# of opportunities for Aboriginals to participate in the forest economy	Maintain number of opportunities (multi-year rolling average)	c
6.1.1	Employees will receive First Nations awareness training	100%	c
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	% of forest operations in conformance with operational/site plans developed to address Aboriginal forest values, knowledge and uses	100% compliance with operational plans	c
6.2.1	% of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes	100%	c
6.3.1	Primary and by-products that are bought, sold, or traded with other local forest dependent businesses in the local area	Report out on a 5 year rolling trend of # of purchase/sale/trade relationships	c
6.3.2	Implementation and maintenance of certified safety program within Canfor	100%	c
6.4.1	PAG established and maintained according to Terms of Reference	80% satisfaction from surveys	c

Indicator #	Indicator Statement	Target	Risk Rank Ref
6.4.2	Number of educational opportunities for information/training that are delivered to the PAG and/or public	>= 1	C
6.4.3	Evidence of best efforts to obtain meaningful participation and input from Aboriginal communities	Report on efforts	C
6.5.1	The number of people to whom educational opportunities provided	50	C
6.5.2	SFM monitoring report made available to the public	SFM monitoring report available to public annually via web	C