



# SUSTAINABLE FOREST MANAGEMENT PLAN

CANFOR ALBERTA FMA AREA #9900037  
CERTIFICATION UNDER CSA Z809-16  
SEPTEMBER 2017







## Sustainable Forest Management Plan 2017

September 2017

Canadian Forest Products Ltd.

Alberta Forest Management Agreement 9900037

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## ACKNOWLEDGEMENTS

Canfor wishes to express appreciation to all members of the Canfor Forest Management Advisory Committee, Norbord Inc., and Government of Alberta (GoA) for the time, effort and expertise contributed toward the development of this Sustainable Forest Management Plan.

Canfor would also like to thank the many individuals who provided information or contributed to specific components of this document.





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## Commitment to Sustainable Forest Management

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Canadian Forest Products Ltd. (Canfor) is committed to sustainable forest management, while at the same time acknowledges and values the company's contribution to the economic and social viability of the communities in which Canfor operates. Canfor believes in conducting its business in a manner that protects the environment and ensures sustainable forest development. The following *Environment Policy* (June, 2016) and *Sustainable Forest Management (SFM) Commitments* (June, 2016) will detail the commitments to SFM for the Canfor Alberta Defined Forest Area (DFA). These commitments are available and communicated publicly. Canfor values the concept of third party verification to confirm that our forest practices and performance meet acceptable standards and therefore has chosen to prepare this Sustainable Forest Management Plan in conformance with the Canadian Standards Association CAN/CSA Z809-16 Sustainable Forest Management system standard.







**WE ARE COMMITTED TO RESPONSIBLE STEWARDSHIP OF THE ENVIRONMENT THROUGHOUT OUR OPERATIONS.**

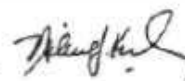
**WE WILL:**

- 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.

JUNE 2016



**DON KAYNE**  
President and Chief Executive Officer



**MICHAEL KORENBERG**  
Chairman





## 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.



# SUSTAINABLE FOREST MANAGEMENT COMMITMENTS



## OPPORTUNITIES FOR PARTICIPATION

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

## SCALE

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

## TIMBER RESOURCE

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

## FOREST LAND BASE

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

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JUNE 2016

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

**DON KAYNE**

President and Chief Executive Officer

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## Executive Summary

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This Sustainable Forest Management Plan is the fourth iteration for the Canfor – Alberta Forest Management Agreement area (GoA, 2015b). The first Sustainable Forest Management Plan (SFMP) was completed in 2000, a second in 2005, and third in 2012.

Canfor's public advisory group, named the Forest Management Advisory Committee (FMAC), supported Canfor Alberta in the development of the previous plans and continued to offer their valuable input to this plan. Members of the FMAC represent a broad cross-section of local interests including Indigenous, recreational, public, Environmental Non-Government Organizations (ENGO), education, tourism, trapping, local municipal governments, outfittin, oil and gas, forestry, conservation, water, and fish and wildlife.

The SFMP includes a set of values, objectives, indicators, and targets that address environmental, economic, and social aspects of forest management within the Defined Forest Area. The plan conforms to the Canadian Standards Association CAN/CSA Z809-16 Sustainable Forest Management (SFM) standard, which is one of the certification systems applied in Canada. Consistent with most certification systems, and as a minimum starting point, the Canadian Standards Association standard requires compliance with existing forest policies, laws, and regulations. The Canfor Alberta SFMP has undergone substantive evaluation prompted by improvements to the Canadian Standards Association SFM Standard, initially in 2000, 2005, and again in 2008. Changes to this plan reflect the 2016 (CSA Z809-16) standard requirements and results of public input following changes to the standard.

Irrespective of changes that have occurred to the Canadian Standards Association SFM standard, the Canfor Alberta SFMP is a dynamic document that is reviewed and revised on an annual basis by Canfor with advice from the FMAC to address changes in forest conditions and local community values. Canfor is committed to the achievement of the objectives of the SFMP. Each year the FMAC reviews the Annual Performance Monitoring Report prepared by Canfor to assess achievement of performance measures. This monitoring process provides Canfor Alberta and the public an opportunity to bring new information forward, and to provide input concerning new or changing public values for incorporation into future versions of the SFMP.

Development of the values, objectives, indicators and targets (Appendix 1) for the 2017 SFMP was founded on three guiding documents:

- The CAN/CSA Z809-16 Standard;
- The *Alberta Forest Management Planning Standard April 2006, Annex 4* values, objectives, indicators and targets (GoA, 2006); and
- The Canfor Alberta 2012 SFMP values, objectives, indicators, and targets prepared under the CAN/CSA Z809-08 Standard.

The Canfor Alberta 2012 SFMP values, objectives, indicators, and targets (VOITs) were included in recognition of the significant contributions made by the FMAC to their development. Upon introduction of the CSA Z809-16 standards, the FMAC members expressed continuing interest and confidence in the VOITs developed for the 2012 SFMP and were keen to continue to use them in the 2017 SFMP where they aligned with the CSA Z809-16 standard. This also ensures that the VOITs approved in the 2015 Canfor Forest Management Plan (FMP) remain consistent with the 2017 SFMP. A strong



link is established between Canfor's certification, performance monitoring requirements and Canfor's forest management planning process and stewardship reporting required by the Government of Alberta, through the alignment of the VOITs in Canfor's SFMP with those in the FMP.

Canfor completed a gap analysis to determine where there were differences between the CSA Z809-08 and CSA Z809-16 standards. This comparison led Canfor to make recommendations to the FMAC regarding which VOITs could be carried forward from the 2012 SFMP and recommend new VOITs to address any gaps that were identified. Following the FMAC's review and acceptance of the recommendations, the remaining VOITs were then refined and incorporated into this SFMP.

The current SFMP and Annual Performance Monitoring Reports are available for viewing and download on Canfor's website <http://www.canfor.com/responsibility/forest-management/plans>.

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## 1.0 Introduction & Overview

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There is 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 wood products have been produced using environmentally and socially responsible forest practices.

The Canadian Standards Association “*Sustainable Forest Management; Requirements and Guidance*” is one of a number of certification systems currently being used in Canada. A Sustainable Forest Management Plan (SFMP) developed according to the Canadian Standards Association (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 composed of a cross-section of local interests including: recreation, tourism, ranching, forestry, conservation, water, community and Indigenous groups fulfill this role. The public advisory group for the Canfor Alberta DFA is named the Forest Management Advisory Committee (FMAC).

Active deciduous quota holders operating on the DFA are required to conduct their operations in accordance with the FMP, which aligns with many of the required SFMP VOITs. The plan is written to provide management direction on all forest land within the DFA.

Canfor – Alberta has been working responsibly with the public to develop credible SFMPs for over 18 years. Other company planning processes, including those relative to Forest Management Plans (FMP), General Development Plans (GDP) and Annual Operating Plans (AOP) also provide opportunities for public review and comment. This SFMP is an example of the commitment of Canfor and other forest companies to adapt their management practices to changes in social values.

The SFMP serves as a “roadmap” to current and long-term management on the DFA with the inclusion of performance targets and management strategies that are reflective of the environmental, social and economic values of the DFA. Furthermore, the plan is consistent with applicable strategic plans such as Canfor’s *2015 Forest Management Plan* (Canfor, 2015) for Forest Management Agreement (FMA) area 9900037 and Provincial government land use plans.

An important pillar of the SFMP is a commitment to pursue continual improvement, which has led to the implementation of processes for reporting, reviewing, and responding to performance results and changing conditions. These processes include participation by FMAC in the review of Annual Performance Monitoring Reports (APMR) and the preparation of revisions to the plan that address, among other things, changes in local community values.

More information about the DFA certification process, sustainable forest management planning, public involvement, annual reporting, and the Canfor FMA area can be obtained at the Canfor office in Grande Prairie and online at [www.canfor.com](http://www.canfor.com).





## 2.0 Guiding Principles

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The Sustainable Forest Management Plan (SFMP) has been prepared in conformance with several core principles, which guide forest management decisions on the Defined Forest Area (DFA).

- Recognition that Indigenous people have constitutionally protected rights including specific Treaty rights to hunt, fish and trap for food on the DFA. Therefore, efforts to recognize, respect, and accommodate Indigenous people's unique rights and values in forest management decisions, plans, and practices must be beyond those afforded to other stakeholders.
- Maintenance of respect for other resource users on the DFA, including Crown licence holders and the general public, and a commitment to communicate effectively and timely in order to maintain the viability of resources for all parties.
- Application of credible science and data in decision-making processes and the preparation of forestry plans.



### 3.0 The Defined Forest Area

#### 3.1 Area Description

##### 3.1.1 Overview

Canfor Alberta has chosen to adopt the Forest Management Agreement (FMA) area 9900037 (GoA, 2015b) as the Defined Forest Area (DFA). The DFA is located in west central Alberta (Figure 1). It is comprised of three separate parcels of forested land identified as Forest Management Unit G15, with a total area of 644,695 ha. The parcels are identified as Peace, Puskwaskau and Main.

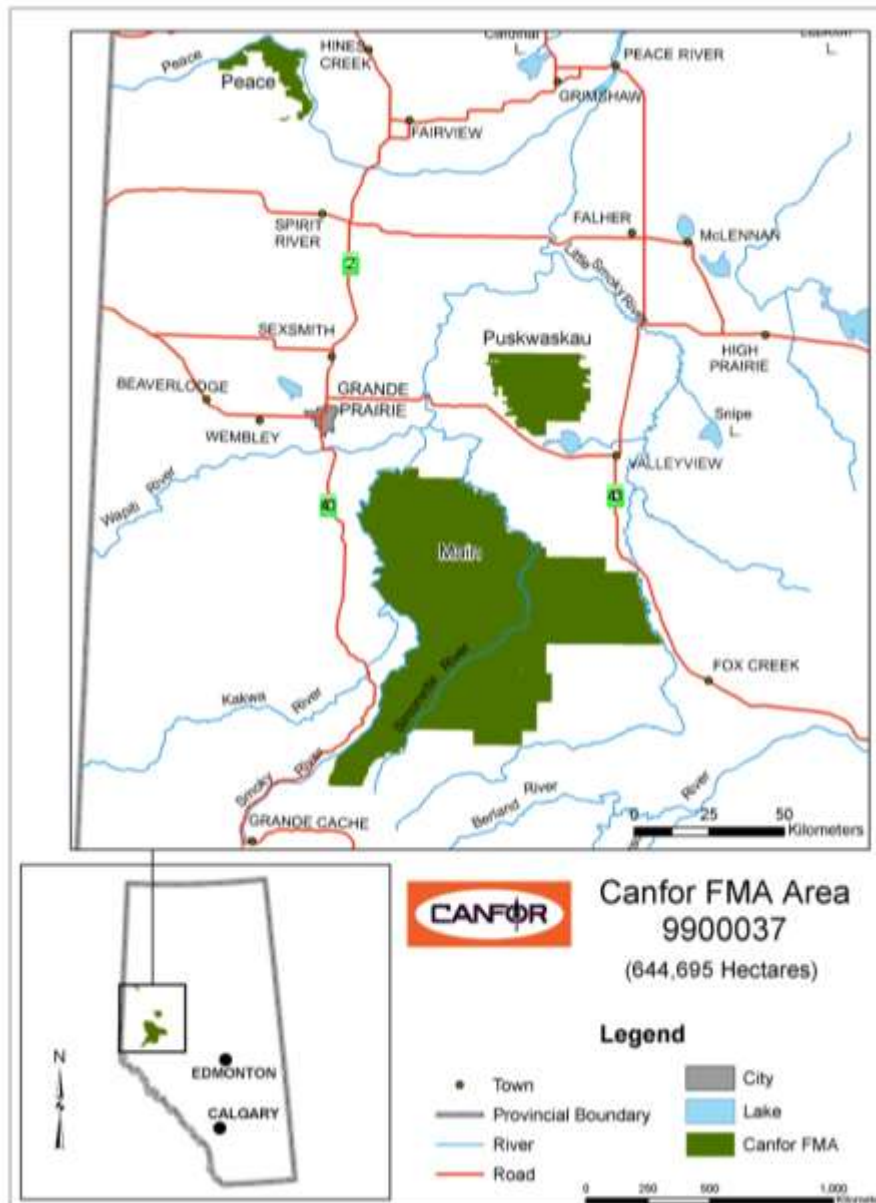


Figure 1: Canfor FMA Area

### **3.1.2 Communities**

#### **Local Communities**

There are no communities within the boundaries of the DFA, although there are several in the vicinity. The most central community located in proximity to the DFA is the City of Grande Prairie, with a population over sixty thousand. Several smaller communities are also located within fifty kilometres of the DFA including Clairmont and Sexsmith to the north, Beaverlodge and Wembley to the west, Grovedale to the south and Bezanson and DeBolt to the east. The communities of Spirit River, Rycroft, Valleyview and Grande Cache are also located in the vicinity of the DFA and have maintained traditional ties to the forest industry. The population of the region has risen dramatically over the past fifty years, driven in large part by the growth of the oil and gas industry and forest industries. That trend is expected to continue into the future.

#### **Indigenous Communities**

Sturgeon Lake Cree Nation is located immediately west of the Town of Valleyview and south of the Puskwaskau parcel of the DFA. Many of the members of Sturgeon Lake Cree Nation are still active in their traditional use area which overlaps Canfor's DFA. Trapping remains an important economic activity for some members, as well as hunting, fishing, and gathering.

Horse Lake First Nation is located near Hythe and have a traditional use area which expands into the DFA. Today, many of its members still utilize the traditional use area for hunting, trapping, fishing, and gathering.

Sucker Creek First Nation is located east of High Prairie along Lesser Slave Lake, in the hamlet of Enilda. The traditional use area of Sucker Creek has been expanded to include a portion of the DFA and its members tend to travel to these areas for the purpose of hunting, fishing, and gathering.

Aseniwuche Winewak Nation of Canada (AWN) was formalized in September 1994 with the amalgamation of the 6 Indigenous settlements surrounding the town of Grande Cache. The members of Aseniwuche Winewak Nation of Canada are non-status Indians descending from Cree, Beaver, Stony, and Iroquois fur trappers and traders who inhabited the area after being moved out of the Jasper area when the National Park was established. Aseniwuche Winewak Nation of Canada has formally claimed traditional area within west central Alberta, including portions of the southern DFA but a claims settlement has not yet been reached. AWN members actively use the DFA for hunting, trapping, fishing, medicinal plants, and berry picking.

East Prairie Metis Settlement, located south of High Prairie has included part of the DFA in their traditional use area as well. Members from the Settlement often travel to the DFA for hunting, fishing, and gathering.

### **3.1.3 Area Economy**

The regional economy is thriving, driven by the exploration, development, and management of natural resources. The region was settled by people of European descent primarily in the mid to late twentieth century, driven initially by trapping and agricultural expansion. The settlement required wood products, resulting in the establishment of a conifer based forest industry. Initially most wood products were sold locally to serve the needs of the agricultural community, but gradually non-local markets were developed. By mid-century, the oil and gas industry also emerged as a significant economic driver in the area. Grande Prairie evolved as the transportation hub for the region and has become the main service centre for northwestern Alberta and northeastern British Columbia.

Today, the forest industry continues to be a major contributor to the local economy. With three major forestry mills within the vicinity of Grande Prairie and the contractor support required to support those mills, it is a large employment provider for the region.

Canfor Corporation operates a modern sawmill and planer operation as well as a cogeneration plant in Grande Prairie, Alberta. Timber for the operation is secured from the DFA and from forest tenure located north and west of the Peace River.

Weyerhaeuser operates a sawmill complex immediately south of Grande Prairie, sourcing its wood from an FMA area generally west of Canfor's FMA area. International Paper operates the pulp mill formerly owned by Weyerhaeuser. The pulp mill continues to use pulp logs and wood chips from the local area. Norbord Inc. operates an Oriented Strand Board mill located 17 kilometers south of Grande Prairie. Wood supply for the Oriented Strand Board mill is sourced from the Canfor and Weyerhaeuser FMA areas, along with purchases from private land. Tolko Industries Ltd. owns an Oriented Strand Board mill located in High Prairie with some of the fibre supply for the plant secured from the Canfor FMA area. The plant was closed in 2008 due to poor market conditions, however is anticipated to begin full operations again in 2018.

The forest industry has traditionally been able to attract workers by offering comparatively high wages and benefits, but growth of the energy sector has created labor shortages in the region and competition in the labor market has grown. Historically, forestry and sawmill jobs often provided seasonal work for the substantial farm labour pool, but the evolution of both industries has changed this synergistic system.

### 3.1.4 DFA Description

The DFA is located in the Central Mixedwood, Dry Mixedwood, Lower and Upper Foothills and Subalpine Natural Subregions<sup>1</sup> (Figure 2) (Achuff, 1996).

Coniferous trees dominate forest stands consisting mainly of white spruce (*Picea glauca*) and lodgepole pine (*Pinus contorta*) in the Upper Foothills and Subalpine Natural Subregions. In lower elevations of the Lower Foothills, Central Mixedwood and Dry Mixedwood, pure and mixed stands of trembling aspen (*Populus tremuloides*) and balsam poplar (*Populus balsamifera*) are interspersed with lodgepole pine, white spruce, and balsam fir (*Abies balsamea*). Poorly drained depression areas and riparian zones throughout the region include black spruce (*Picea mariana*), tamarack (*Larix laricina*), labrador tea (*Ledum groenlandicum*), willow (*Salix* spp.), peat and brown mosses (*Sphagnum* spp., *Tomenthyphnum nitensm*, *Aulacomniun palustre*), and horsetails (*Equisetum* spp.).

These subregions are associated with foothills topography as well as undulating and rolling terrain. Stream elevations range from 400 m above sea level near the Puskwaskau River confluence with the Smoky River, to over 1,700 m above sea level in the southern headwaters. Landscape features are a result of both continental and cordilleran glaciers covering the area during the Pleistocene epoch with morainal, glacial-fluvial, and glaciolacustrine deposits being predominant (Halstead, 2013). Colluvial and residual bedrock materials frequent higher elevations of the Subalpine Subregion, while bedrock outcrops of marine shale and non-marine sandstone are frequent in the Foothills Subregions. The Dry and Central Mixedwood Subregions are

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<sup>1</sup> A Natural Subregion is a division of the Natural Region based on differences in regional climate, landform, bedrock geology and soils. The Natural Subregion is more refined than a Natural Region through variations in elevation in addition to distinctive vegetation associations. Natural Subregions contain "reference" vegetation types that are characterized by climate and environment (moisture and nutrients).

characterized by till as ground moraine and hummocky moraine landforms with aeolian dunes and sandy outwash plains occurring throughout (Achuff, 1996).

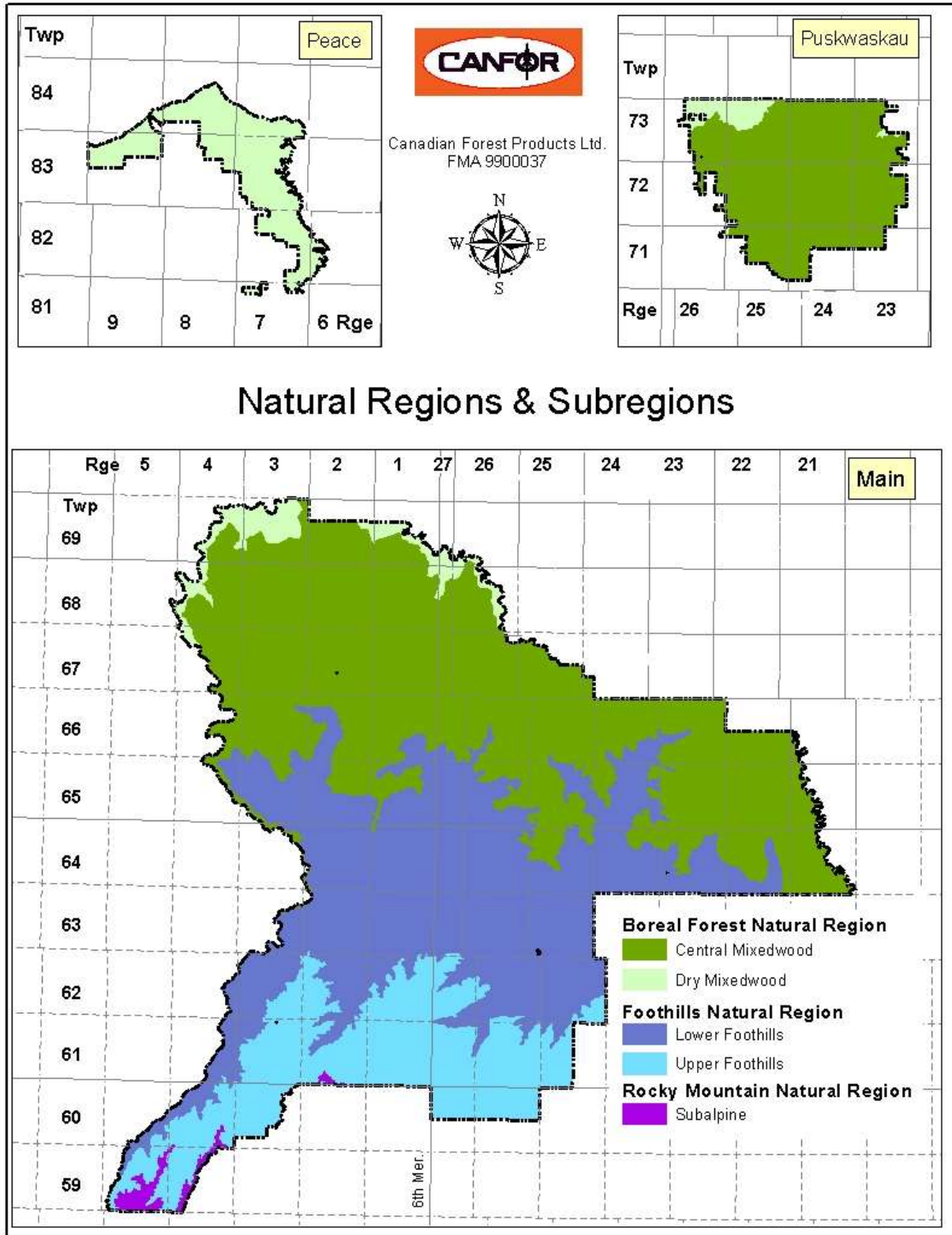


Figure 2: Natural Subregions Within the DFA



### 3.1.5 Species at Risk

Species at risk are determined at two levels: The Federal Species at Risk Act and the Alberta Wildlife Act.

Federally, species protected under Species at Risk Act are determined by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) comprised of an independent body of experts responsible for assessing and identifying species at risk. COSEWIC assesses and classifies a wildlife species as extinct, extirpated, endangered, threatened, special concern, data deficient, or not at risk. COSEWIC provides its report to the Minister of the Environment and the Canadian Endangered Species Conservation Council.

Provincially, evaluation of the status of species at risk in Alberta relies upon the activities of the Alberta Endangered Species Conservation Committee (ESCC) and its scientific arm, the Scientific Subcommittee, both created under the auspices of the *Wildlife Act*. Using information contained in detailed status reports, the Scientific Subcommittee of the ESCC assesses what the risk of extinction or extirpation is for Alberta species that have been identified as potentially at risk through the General Status process. The Scientific Subcommittee evaluation is presented to the ESCC, which then decides what recommendations to make to the GoA concerning the legal designation (e.g. 'endangered' or 'threatened'), as well as management and recovery of a species (ESCC, 2009).

The Alberta Forest Management Planning Standard (AFMPS) prescribes a coarse filter approach for the management of all species collectively, combined with a fine filter approach for species of interest (GoA, 2006). Species of interest are often on the list of species at risk. Under the Provincial VOIT1.2, the Plan Development Team identifies the species that will require specific management strategies in the FMP. In this plan, the Plan Development Team identified grizzly bear, trumpeter swan, woodland caribou, barred owl, bull trout, and Arctic grayling as fine filter species. The management of these species will be directed by fine filter strategies embedded in the SFMP. These strategies are outlined in the description of VOITs listed in Section 6 of this document.

### 3.1.6 Defined Forest Area Use

The resources of the DFA are utilized by a number of users listed below:

#### 3.1.6.1 Deciduous Forest Companies

Tolko Industries Ltd. (Tolko) and Norbord Inc. (Norbord) have been granted Deciduous Timber Allocations that issue rights to utilize deciduous species in the FMA area. Table 1 provides a breakdown of the deciduous volume allocations by 5 year quadrant.



**Table 1. Deciduous Timber Allocations (m<sup>3</sup>/year) within the Defined Forest Management Area**

FMU	Company	Disposition Number	Allocation (m <sup>3</sup> /yr)
G15	Tolko	DTAG150001	114,406
G15	Tolko	DTAG150002	168,548
G15	Norbord	DTAG150003	169,546
Total			452,500

**3.1.6.2 Oil and Gas Sector**

Much of northern Alberta, including the DFA, is underlain with rich oil and gas deposits. Exploration and production of the hydrocarbons found in these deposits has a significant impact on the local, provincial, national, and international economies. The oil and gas sector has been, and will continue to be, a major factor influencing the boreal forest landscape. Mineral development and geophysical deletions within the DFA are authorized under a variety of legal instruments including licenses of occupation, pipeline agreements, mineral surface leases, and rights of entry.

**3.1.6.3 Outfitters**

Outfitters operate in all portions of the DFA. Outfitters operate within Wildlife Management Units established by GoA (Figure 3). Alberta Professional Outfitters Society maintains an official directory of outfitters that are permitted to operate in Alberta [www.apos.ab.ca](http://www.apos.ab.ca).

**3.1.6.4 Grazing Dispositions**

According to the *Public Lands Act, Dispositions and Fees Regulation* (GoA, 2011a), a grazing disposition means a grazing lease, forest grazing lease, a grazing license, a grazing permit or a head tax grazing permit. There are 5 forest grazing licenses within the DFA (Figure 4).

In accordance with subparagraph 8(1) (d) of Forest Management Agreement area Agreement 9900037 the Minister has:

*...“the right to authorize trapping and, after consultation with the Company, to authorize domestic stock grazing provided that the domestic stock grazing will not damage regeneration of managed species to the point where growth performance and overall stocking are reduced below the reforestation standards provided for in or agreed to pursuant to the Timber Management Regulation and provided that the Company’s right to establish, grow, harvest and remove timbers is not significantly impaired (GoA, 2015b).*

**3.1.6.5 Registered Fur Management Areas**

There are 58 Registered Fur Management Areas (RFMA) within the DFA (Figure 5). Canfor Alberta notifies trappers of activities planned within their RFMA during the preparation of a Forest Harvest Plan (FHP) and at least ten days prior to commencement of operations as per the Operating Ground Rules.



**3.1.6.6 General Public**

The public uses the DFA for a number of recreational activities. These include camping, hunting, fishing, OHV recreational use, berry picking, firewood gathering, and other pursuits. All access is open to the public, although some roads are gated for the protection of wildlife. These

gates are meant to limit vehicle access but do not prevent the public from travelling beyond them by other means.

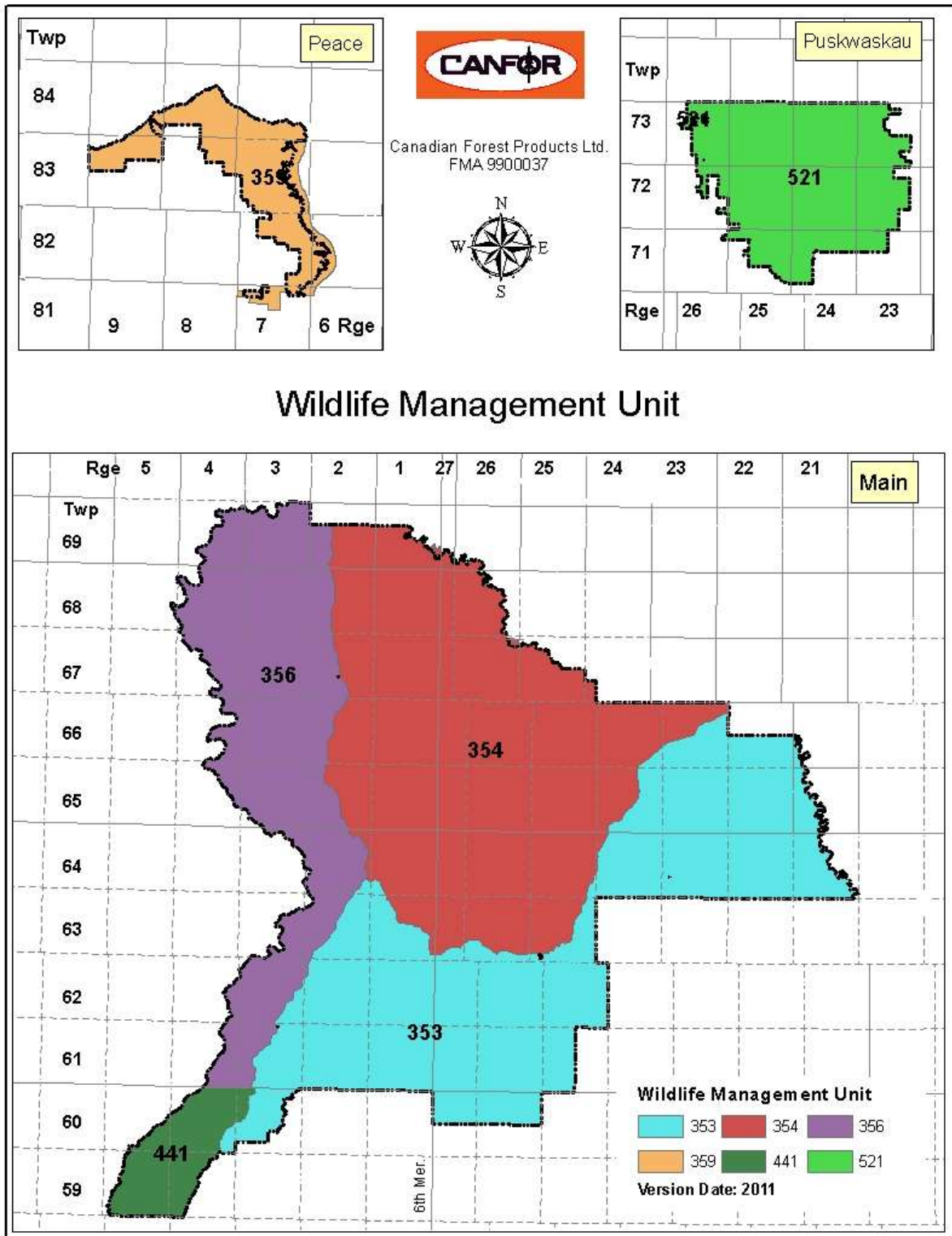


Figure 3: Wildlife Management Unit

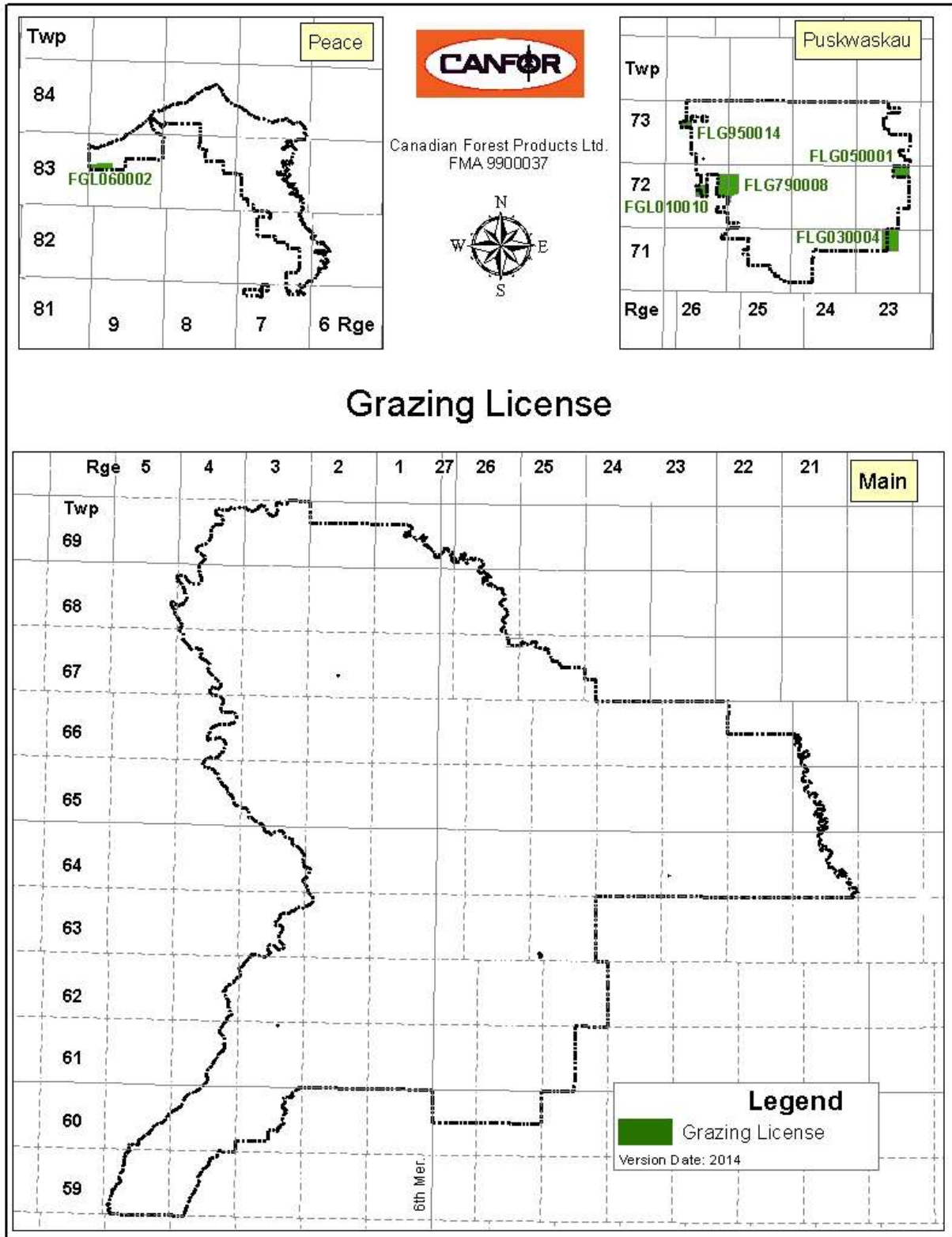


Figure 4: Grazing Dispositions Within the DFA

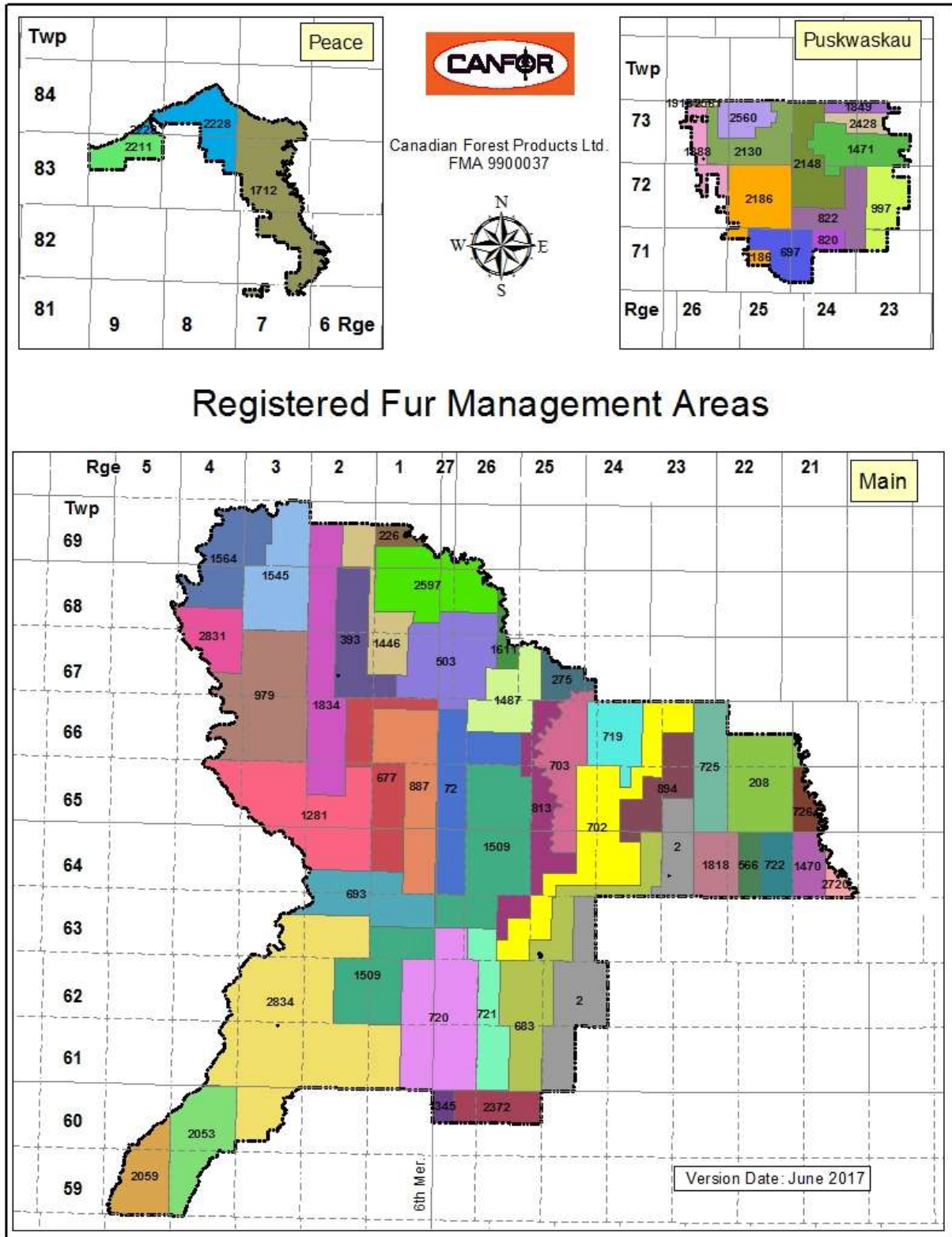


Figure 5: Registered Fur Management Areas Within the DFA





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## 4.0 The Planning Process

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### 4.1 The Canadian Standards Association Certification Process

The CSA Sustainable Forest Management (SFM) Standard, initially developed in 1996 and subsequently revised and improved in 2002, 2009 and again in 2016 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.

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

- Participants must develop and achieve performance measures for on-the-ground forest management, monitored through an annual public review with the input of the public and Indigenous Communities (Section 4.1.1).
- Participants who choose to be registered to the CSA standard must incorporate CSA defined systems components into an internal environmental management system (EMS) (Section 4.1.2).

For a tenure holder seeking certification to the CSA Sustainable Forest Management standard, the Defined Forest Area (DFA) Sustainable Forest Management Plan (SFMP) or a licensee-specific plan, complimentary to the DFA SFMP, is developed. The licensee-specific plans may contain additional information such as their DFA 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.

#### 4.1.1 Public and Indigenous Involvement: Performance Requirements and Measures

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

1. Biological diversity,
2. Ecosystem condition and productivity,
3. Soil and water,
4. Role in global ecological cycles,
5. Economic and social benefits,
6. Society's responsibility, and
7. Indigenous community relations

Each criterion has a number of "elements" that further define the intent. The criteria and associated elements are all defined under the CSA standards and must be addressed during

development of the SFM Plan. The criteria are endorsed by the Canadian Council of Forest Ministers and are aligned with international criteria.

For each set of criteria and elements, forest managers, and the FMAC must identify local values and objectives. Indicators and targets are assigned to the values and objectives to measure performance.

Discussion Items identified in the CSA Z809 Standard for each of the seven SFM criteria have been reviewed and discussed as needed by the FMAC in conjunction with the development of this SFM Plan. Detailed information on the topics discussed can be found in the meeting summaries and reference material associated with the development of this Plan.

**Values** identify the key aspects of the elements. For example, one of the values associated with “species diversity” might be “habitat representation”.

**Objectives** describe the desired future condition, given an identified value. For example, the objective to meet the value of “habitat representation” might be “habitat for focal species is maintained on the landscape”.

**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 specific short-term (one or two year) commitments to achieve identified indicators. 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 “prompt reforestation” one target might be “to have ‘x’ percent of all harvested blocks reforested within ‘x’ years.”

VOITs apply to social, economic and ecological criteria and may address process as well as on-the-ground forest management activities.

As part of the process of developing VOITs, the SFM Advisory Group also assisted in the development of forecasts of predicted results for indicators and targets. This information and interrelationship is further described in Section 6. Forecasts are a prediction of the expected future condition of an indicator. These have been incorporated into the SFM Plan targets as predicted results or outcomes for each objective. Forecasting is further described in Section 6.5 and sometimes occurs where there is some reliance on the Timber Supply Analysis (TSA) process.

#### 4.1.2 Environmental Management System Components

The CSA SFM system includes a number of processes or systems-related requirements called “systems components” as follows:

- **Commitment:** A demonstrated commitment to developing and implementing the SFM Plan.
- **Public and Indigenous Group participation:** The CSA standard requires informed, inclusive and fair consultation with Indigenous groups 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 the implementation of the SFM Plan and is designed to meet CSA standards. The

management system has four basic elements: 1) Planning; 2) Implementing; 3) Checking and Monitoring; and 4) Review and Improvement. The management system includes the following base components:

- Identify environmental commitments including those within the SFM Plan.
  - Identify standard operating procedures or develop performance measures to assess and achieve environmental commitments.
  - Develop emergency procedures in the event of an incident causing environmental impact.
  - Review all laws and regulations.
  - 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)
  - If an incident does occur, conduct an investigation of incident review and develop an action plan to correct and prevent subsequent occurrences.
- **Continual improvement:** within the context of the management system, monitoring and reviewing the system and its components continually improve the effectiveness of the SFM Plan. This includes a review of ongoing planning, and public process to ensure that the management system is being implemented as effectively as possible. SFM Plan improvements generally occur on an annual basis. Changes are generally made as a result of annual plan performance reporting and changes in science and technology. The changes can be initiated by the public (often those participating in the FMAC) or the licensee (i.e.: because of internal discussions that occur during their management review).

#### 4.1.3 Canadian Standards Association Registration

Following completion of a SFMP 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 a sustainable forest management 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 FMS has been developed and is being used to manage and direct achievement of the SFMP performance measures; and
- progress toward achieving the targets is being monitored, and monitoring results are being used for continual improvement of the Sustainable Forest Management Plan and Environmental Management System.

A typical registration audit may include:

- interviews with FMAC members;
- a review of monitoring and reporting responsibilities related to Canadian Standards Association performance measures;
- meetings with government officials to discuss licensee performance and government involvement in development of the Sustainable Forest Management Plan;
- 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 Canfor's FMS, including the requirement that regulatory standards and policy requirements are met or exceeded.

#### **4.1.4 Audits and Public Review**

Each year the licensee compiles a report that summarizes results for each of the performance measures. This annual report is provided to the SFM Advisory Group for review and comment. Annual monitoring of the achievement of the Plan and comparison of the actual results to forecasts will enable the effectiveness of the SFM Plan to be continually improved, in keeping with CSA standards. Additionally, the licensee will provide summary information of the individual results, specific to their Defined Forest Area.

The achievement of performance measures (indicators and targets) will be assessed annually through surveillance audits carried out by a registered third party auditor. The audits will determine whether the registrant has successfully implemented the SFM Plan and continues to meet the CSA Standard. Audit summaries are available to the public.

## **4.2 The Defined Forest Area Sustainable Forest Management Planning Process**

The Sustainable Forest Management Plan (SFMP) was developed by Canfor Alberta on advice and recommendations provided from Canfor Alberta's public advisory group named the Forest Management Advisory Committee (FMAC). The plan was developed to comply with all existing legislation and policy and consistent with the strategic direction of higher-level plans as identified in the *Alberta Forest Management Planning Standard* (GoA, 2006).

During the development of the plan, a gap analysis was completed to compare the Z809-08 standard with the Z809-16 standard. Canfor identified gaps in the Canfor Alberta 2012 *Sustainable Forest Management Plan* (2012 SFMP) to the Z809-16 standard. The FMAC expressed interest in continuing to use the VOITs from the 2012 SFMP where consistent with the new standard as they are still very relevant to the monitoring and measuring of SFM performance on the DFA. Where gaps were identified, the FMAC was engaged in developing the additional VOITs.

The plan will be continually updated and improved to incorporate new information, changing values, recommendations from monitoring activities and new circumstances.

### **4.2.1 Public Participation**

The FMAC assisted Canfor Alberta in developing the SFMP by identifying local VOITs and evaluating the effectiveness of the plan.

Members of the FMAC represented a cross-section of local interests including environmental organizations, Indigenous communities, resource-based local communities, public at large, etc. An open and inclusive process was used to formulate the FMAC. GoA provided technical support to the sustainable forest management planning process, including information on resources and policy issues. The Committee was guided by, the *Canfor Alberta Operations Forest Management Advisory Committee Terms of Reference* (ToR) (Appendix 2). The ToR is consistent with the CSA standard, and specifies that the process for developing the SFMP must be open and transparent. As part of the updating of the SFMP to meet the requirements of the

revised 2016 CSA standard (Z809-16), considerable discussion occurred on specific topics related to the seven Criteria.

FMAC reviews annual reports prepared by Canfor Alberta to assess achievement of performance measures. This monitoring process provides Canfor Alberta and others with an opportunity to bring forward new information and to provide input concerning new or changing public values that can be incorporated into future updates of the SFMP.



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## 5.0 Strategy Guiding the Sustainable Forest Management Plan

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### 5.1 Forest Management Plan

Canfor Alberta is required to submit a Forest Management Plan (FMP) as defined in the Forest Management Agreement (FMA) with the Province (GoA, 2015b). The *Alberta Forest Management Planning Standard* (AFMPS) is the guiding document for the completion of the FMP (GoA, 2006). The Government of Alberta (GoA) created the AFMPS with the CSA Z809 process as a guiding document. For this reason, there is significant synergy between FMPs and SFMPs. Canfor has decided that development of the plans simultaneously is the most effective process to ensure alignment. Both documents guide the strategic and operational decisions and plans made by Canfor forest practitioners.

### 5.2 Sustainable Forest Management Plan Strategy for the Defined Forest Area

The DFA SFMP is aligned with the FMP strategic direction. The SFMP includes appropriate indicators to confirm forest management practices are aligned with the FMP goals and objectives, and that there is appropriate consideration of Indigenous groups, public, and other stakeholder interests. The SFMP, guided by the FMP, utilizes indicators and targets that:

- reflect key goals, objectives and direction of the FMP;
- 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 identified for each indicator in Section 6 of the SFMP.

### 5.3 Additional Guidance

Canfor is also guided by legislation, laws and policies established by federal, provincial and municipal governments.



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## **6.0 Indicators & Indicator Matrices**

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The Forest Management Advisory Committee (FMAC) has identified local values and objectives for each of the Canadian Standards Association (CSA) defined elements. These values and objectives are summarized in this section.

Sustainable Forest Management Plan (SFMP) indicators and their targets are described in Section 6.7. A summary table showing all criteria and elements and the associated local VOITs is provided in Appendix 1.

The indicators and targets in a SFMP 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. The Defined Forest Area (DFA) indicator statements were developed for each CSA 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 similar to the set of core indicators, thus the targets used to measure these core indicators have not changed significantly. Full conformance is required for many targets therefore no variance is appropriate. Where less than full conformance will pose an acceptable risk, an acceptable level of variance is indicated for the target.

Licensees monitor the achievement of targets annually. Monitoring procedures for each target are described below. Management strategies provide further direction to the performance measures (indicators and targets) and serve as a guide during annual monitoring activities.

### **6.1 Objectives, Indicators & Targets**

The SFMP process has served to further refine the information and concerns of the local public. Incorporating these concerns and ideas into operations through the established performance measures 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 noted below.

Section 5 describes the plans, policies, and management strategies that support the achievement of the targets in the SFMP.

### **6.2 Baseline for Indicators**

The primary source of baseline information for indicators is the initial monitoring report subsequent to adoption of the indicator. Where existing indicators and targets were used to satisfy a CSA core indicator, the baseline will be identified as May 1, 2014, which is the landbase effective date of the 2015 Forest Management Plan (FMP) for the DFA. 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 annual performance monitoring reports.

### **6.3 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 Annual Performance Monitoring Report (APMR) located at [www.canfor.com](http://www.canfor.com).

## 6.4 Forecasting

Forecasts are the projection of the expected or desired future condition. A variety of models have been used in the development of the projections. Where appropriate, the projections have been incorporated into the SFMP targets as the expected response or outcome for each target. Forecasting of many of the SFMP indicators and targets occurred during the development of the Forest Management Plan (FMP). The model used in the Timber Supply Analysis (TSA) for the FMP uses the indicators and targets as inputs and constraints that interact with each other. The model works to find a balance and optimal solution to meet these constraints and targets, which results in the selection of a Preferred Forest Management Scenario (PFMS) Spatial Harvest Sequence (SHS). The outputs from the PFMS are quantitative forecasts of the indicators and targets of the SFMP.

Examples of this are Indicators 1.1.2 Distribution of Forest Type, 1.1.3b) Patch Size and 1.1.3c) Seral Stage. A change to one will change the results of others. Many quantitative indicators have tables indicating the current state and forecast over the 200-year planning period.

Other indicators and targets are qualitative, and although they are not based on quantitative model outputs, they are based on local values, sound science, and legislation. In these cases, achievement of the target is deemed to achieve the values and objectives the indicator represents. In these cases, the forecast is the desired future condition of the value and objective.

## 6.5 Legal Requirements

Awareness of legal requirements is essential when considering suitable Objectives for an Element and determining appropriate Indicators and Targets. In the following list of Indicators, applicable Acts and Regulations are noted in the “Legal Requirements” section. Specific sections/subsections of these Acts and Regulations have not been identified to avoid having to manage the ongoing changes to forest legislation. Canfor Alberta ensures that specific legislation related to values, objectives, indicators, and targets (VOITs) 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.

## 6.6 Response

Canfor Alberta’s SFMP is also used to address Annex 4 of the *Alberta Forest Management Planning Standard (AFMPS)* for the FMP. Annex 4 requires that the company state a response for each target to indicate what action will be taken to appropriately address those targets that are not met (GoA, 2006).

## 6.7 Indicators in the Sustainable Forest Management Plan

### 1.1.1 Representation of Ecological Communities at the Landscape Level

<b>Criterion 1: Biological Diversity</b>	<b>Element 1.1: Ecosystem Diversity</b>
<b>Value</b>	Natural ecosystems on the landscape
<b>Objective</b>	All ecosystems are represented on the landscape at current levels
<b>CSA Core Indicator</b>	1.1.1 Ecosystem area by type
<b>Indicator Statement</b>	<b>Uncommon ecological communities maintained (AFMPS VOIT 1.1.1.4)</b>
<b>Description of indicator</b>	Alberta Conservation Information Management System develops tracking lists of elements that are considered of high conservation priority because they are rare or special in some way. Maintenance of uncommon ecological communities is a societal value, important in maintaining biodiversity.
<b>Target</b>	<b>100% of identified uncommon ecological communities will be maintained</b>
<b>Description of target</b>	Uncommon ecological communities, defined as either S1 or S2 in the Alberta Conservation Information Management System, will be maintained on the Defined Forest Area through training, identification and development of site-specific strategies.

#### **Basis for the Target**

To ensure conservation of biodiversity, uncommon ecological communities occurring on the Defined Forest Area may require special management considerations. The Alberta Conservation Information Management System (ACIMS) website provides information on the type and potential location of uncommon ecological communities.

<http://www.albertaparks.ca/albertaparksca/management-land-use/alberta-conservation-information-management-system-acims/tracking-watch-lists/>



## Means of Achieving Objective & Target (Strategies)

Three steps are required; mapping of potential locations, training in identification, and development of protection strategies for identified sites. The ACIMS Ecological Communities maps are compared annually to any new proposed harvest areas and roads to identify potential overlap between planned blocks and potential areas of S1 and S2 ecological communities. Canfor has developed an *Uncommon Ecological Community Identification Guide* (Canfor, 2014) that will assist field personnel in identifying these communities. The identification manual also includes uncommon ecological community reporting procedures and forms and will be distributed to all Planning staff and contractors to be used for the field season.

Training on identification of S1 and S2 ecological will also be provided to employees and contractors. Finally, when S1 and S2 ecological communities are identified during the field operations stage, strategies to protect and mitigate impact will be developed in consultation with the Government.

## Current Status

ACIMS has added Canfor to its uncommon ecological communities update notification list. Canfor staff checks the shapefiles supplied from the ACIMS website and identifies if there are any new sensitive or non-sensitive communities have been identified on the DFA.

Currently, there are no known sensitive plant communities on the DFA and there is one identified non-sensitive plant community on the DFA.

**Table 2. Known Uncommon Ecological Communities on Canfor's DFA**

Type	S_RANK	SNAME	Common Name
Non-sensitive	S2S3	<i>Populus tremuloides / Rubus parviflorus / Aralia nudicaulis</i>	Trembling Aspen/thimbleberry/wild sarsaparilla

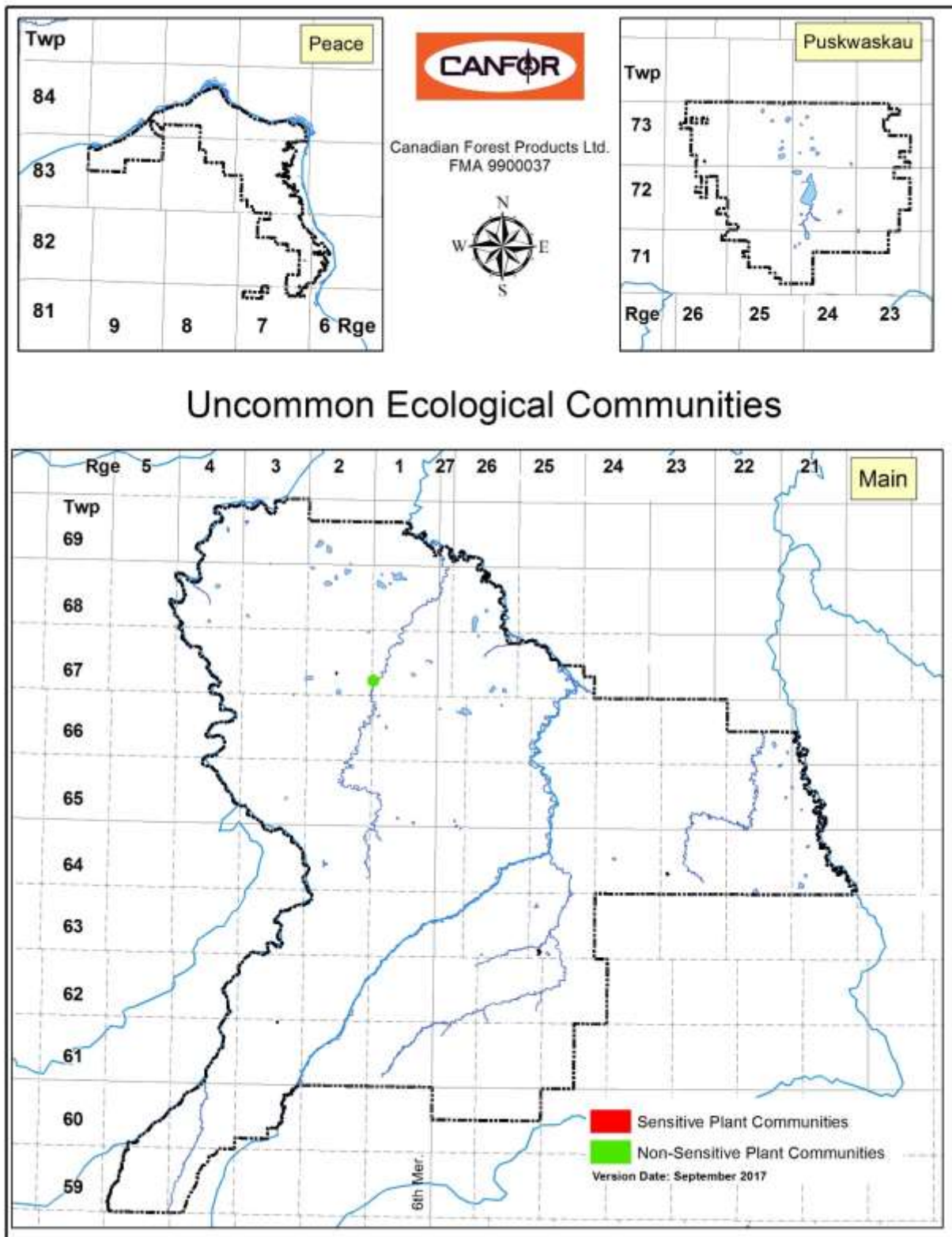


Figure 6: Uncommon Ecological Communities on Canfor's DFA

## **Forecast**

Uncommon forest/woodland ecological communities will be maintained into the future.

## **Legal Requirements**

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 1.1.1.4*

## **Monitoring & Measurement**

### **Annual:**

The following will occur:

- A list demonstrating that Forest Harvest Plans were compared to ACIMS classification and mapping for potential overlap will be maintained;
- training of Planning employees will be recorded in the Eclipse Training Database;
- field contractor training will be recorded on the pre-work form; and
- all field confirmed sites will be reported to ACIMS and management strategies developed.

Results will be reported in the Annual Performance Monitoring Report (APMR) and all field confirmed sites will be reported to ACIMS.

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 1.1.2 Distribution of Forest Type

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.1:</b> Ecosystem Diversity
<b>Value</b>	Natural ecosystems on the landscape
<b>Objective</b>	All ecosystems are represented on the landscape at current levels
<b>CSA Core Indicator</b>	1.1.2 Forest area by type or species composition
<b>Indicator Statement</b>	<b>Percent distribution of forest type (treed conifer, treed broad leaf, treed mixed) &gt;20 years old across Defined Forest Area (no AFMPS VOIT)</b>
<b>Description of indicator</b>	Tree species composition and stand structure are important variables that affect the biological diversity of a forest ecosystem, providing structure and habitat for other organisms.
<b>Target</b>	<b>Maintain the current baseline percent distribution of forest types (treed conifer, treed broad leaf, treed mixed) &gt;20 years old into the future</b>
<b>Description of target</b>	Retain the broad forest cover types into the future.

#### **Basis for the Target**

Tree species composition, stand age, and stand structure are important variables to 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.

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. Reporting on this indicator provides high-level information by broad forest type, forest succession, and management practices that might alter species composition.

Treed conifer forests are those where conifers dominate the species mix (at least 80% of trees are conifer); treed broad leaf forests are those where mostly deciduous trees dominate the species mix (at least 80% 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.

#### **Means of Achieving Objective & Target (Strategies)**

To maintain baseline ranges it is critical that regenerated forests are managed to the proper trajectory. Forest plans will incorporate reforestation strategies that retain the natural balance of

broad forest types within the DFA. Silviculture plans will be implemented and results will be monitored. The broad forest types were derived from stratification used in the FMP.

### Current Status

The percent distribution of forest types (Table 3) greater than 20 years of age across the DFA in the 2016 timber year is 33% treed conifer, 12% treed broadleaf, and 55% treed mixed (baseline derived from Alberta Vegetation Inventory and FMP landbase effective May 1, 2014).

### Forecast

Healthy ecosystems with a diversity of native (treed conifer, treed broad leaf, and treed mixed) species maintained at sustainable levels as predicted in Table 3 for years 10, 20, 50, 100 and 200.

**Table 3. Distribution of Forest Types (ha)**

Year	Treed Conifer (ha)	Treed Broad Leaf (ha)	Treed Mixed (ha)	Treed Conifer (%)	Treed Broad Leaf (%)	Treed Mixed (%)
Baseline	127,300	50,974	218,756	32%	13%	55%
2014 TY	123,974	50,818	218,431	32%	13%	55%
2015 TY	140,791	50,138	231,400	33%	12%	55%
Current (2016 TY)	141,761	50,175	231,857	33%	12%	55%
10	158,963	50,589	234,055	36%	11%	53%
20	177,333	51,688	236,143	38%	11%	51%
50	181,643	53,252	238,451	38%	11%	50%
100	181,643	54,694	242,396	38%	11%	51%
200	181,643	55,356	243,576	38%	12%	51%

### Legal Requirements

Not applicable.

### Monitoring & Measurement

#### Annual:

The percentage of area by forest type will be compared to the Preferred Forest management Strategy (PFMS) Spatial Harvest Sequence (SHS) every year to ensure that the forest types meets the levels identified and is therefore trending towards levels identified over the long-term. The results will be reported in the Annual Performance Monitoring Report.

### Acceptable Variance

+/- 5% of the baseline percent for all three forest types

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 1.1.3a) Old Interior Forest

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.1:</b> Ecosystem Diversity
<b>Value</b>	Natural ecosystems on the landscape
<b>Objective</b>	All ecosystems are represented on the landscape at current levels
<b>CSA Core Indicator</b>	1.1.3 Forest area by seral stage or age class
<b>Indicator Statement</b>	<b>Area of old interior forest by Natural Region by cover class across the Defined Forest Area (AFMPS VOIT 1.1.1.2b)</b>
<b>Description of indicator</b>	Old interior forests are defined by both an age and size criteria. The percentage of the landbase that meets both criteria within the Boreal and Foothills Natural Regions are derived and used as targets.
<b>Target</b>	<b>100% of area of old interior forest will be within the 10-year forecast by Natural Region</b>
<b>Description of target</b>	The amount of old interior forest is derived from the approved forest cover database (Alberta Vegetation Inventory) and a Geographical Information System (GIS) algorithm to extract the data. This initial amount is used as a target for the remainder of the 200-year planning horizon. The timber supply model spatially projects the landbase into the future, enabling the projection of the amount of old interior forest that will exist at any given point in time.

### **Basis for the Target**

Old interior forest is a habitat requirement for some species. Harvesting, and other disturbances such as fire, have historically reduced the amount of old growth habitat, as well as fragmented larger old growth stands that would meet the habitat requirements of those species. New forest planning tools allow the forest manager to ensure stands of a specific description can be maintained along with some harvest level.

According to *Alberta Forest Management Planning Standards, Annex 4 - Performance Standards* interior forest is:

*a forested area greater than 100 ha in size located beyond edge effect buffer zone (1) along the edge (2). The interior forest objective will use a common age definition for all cover classes (yield groups) to prevent breaking up forest patches that have a common origin date (GoA, 2006).*

Where:

(1) Forest edge: any of the following: a) a linear disruption in forest cover greater than 8m in width, or b) the line along which forest seral stage class changes.

(2) Edge effect buffer zone: 60 m where adjacent area is non-forested or less than 40 years old; 30 m where adjacent forest stand is  $\geq 40$  year, and less than mature forest; 0 m where adjacent forest stand is mature forest (GoA, 2006).

### Means of Achieving Objective & Target (Strategies)

The starting levels of old interior forest are derived from the landbase summaries of the Alberta Vegetation Inventory and FMP landbase, effective May 1, 2014 data using old interior forest criteria. These levels are listed by Natural Region and cover groups in Table 4. Modeling was completed and the PFMS selected to ensure that these levels could be achieved at key points in time (current, 10, and 50 years).

### Current Status

Table 4 shows the current amount of area of old interior forest by Natural Region and cover group.

**Table 4. Old Interior Forest by Natural Region**

Subregion	Cover Class	Old Interior Forest Area (ha)								
		Baseline	2014 TY	2015 TY	Current (2016TY)	Year 10	Year 20	Year 50	Year 100	Year 200
Boreal	C	490	419	427	446	458	1,007	7,260	10,174	10,357
	CD	146	93	82	93	189	65	34	97	99
	D	120	-	119	1,005	4	263	1,150	730	770
	DC	77	44	47	48	96	79	72	220	221
	Du	-	-	-	-	-	-	15	340	306
<b>Boreal Total</b>		<b>834</b>	<b>556</b>	<b>676</b>	<b>1,592</b>	<b>747</b>	<b>1,414</b>	<b>8,531</b>	<b>11,561</b>	<b>11,753</b>
Foothills	C	5,773	4,732	4,952	4,884	7,129	7,442	12,815	13,062	13,970
	CD	303	302	291	291	67	83	148	188	195
	D	2	2	1	2	4	-	195	278	233
	DC	101	93	189	187	56	45	47	123	133
	Du	-	-	-	-	-	-	18	119	192
<b>Foothills Total</b>		<b>6,178</b>	<b>5,129</b>	<b>5,433</b>	<b>5,363</b>	<b>7,255</b>	<b>7,570</b>	<b>13,223</b>	<b>13,770</b>	<b>14,723</b>
<b>Total</b>		<b>7,012</b>	<b>5,685</b>	<b>6,109</b>	<b>6,955</b>	<b>8,003</b>	<b>8,984</b>	<b>21,754</b>	<b>25,331</b>	<b>26,476</b>

### Forecast

Old interior forest by Natural Region will be maintained at target levels outlined in Table 4 through time.

### Legal Requirements

Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 1.1.1.2b



## **Monitoring & Measurement**

### **Annual:**

The timber supply model forecasts the area of old interior forest by Natural Region from the PFMS. The target will be monitored annually to verify trend towards meeting predicted levels in Table 4 and reported in the APMR.

## **Acceptable Variance**

Area of old interior forest will not be less than 90% of the 10-year forecast by Natural Region for each cover group

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 1.1.3b) Patch Size

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.1:</b> Ecosystem Diversity
<b>Value</b>	Natural ecosystems on the landscape
<b>Objective</b>	All ecosystems are represented on the landscape at current levels
<b>CSA Core Indicator</b>	No CSA Core Indicator
<b>Indicator Statement</b>	<b>Range of patch sizes by subunit and entire Defined Forest Area (AFMPS VOIT 1.1.1.2a)</b>
<b>Description of indicator</b>	Patch definitions include age, seral, structural-based, and habitat-based systems. These systems all classify contiguous stands into patches based on similar criteria. Patch dynamics are explored showing how patch distributions change in a variety of classification-dependent ways as the landscape ages.
<b>Target</b>	<b>Patch size distribution will achieve natural patch size distribution levels over the 200-year planning horizon</b>
<b>Description of target</b>	The distribution of patch size is reported by 0 - 100 ha, 100 - 500 ha and 500+ ha classes. These classes were defined based on extensive literature review and the maximum 500 ha aggregation rule.

#### **Basis for the Target**

Fragmentation of the forest landscape is an ecological concern related to some plants and animals. Maintenance of a natural range of patch sizes will allow these species to continue their presence on the landbase. Patch size distribution targets were derived for the Boreal Forest and Foothills Natural regions based on theoretical fire-return intervals (ORM, 2000). Targets for the Boreal Forest Natural region were derived from measured patch size classes of four 20 year periods of unmanaged forests (Tanner, 1996); while targets for the Foothills Natural Region were based on the distribution of patch sizes in historical pre-suppression air photos of the Foothills Model Forest in Hinton, Alberta (Andison, 1997). The targets for the reporting units (FMA area and the Peace, Puskwaskau and Main portions) are weighted based on the proportion of areas in the Boreal Forest and Foothills Natural Regions.

**Table 5. Natural Disturbance Patch Size Class Percentage**

Reporting Areas	Percent by Area					
	1–100 ha		100–500 ha		500+ ha	
	LL	UL	LL	UL	LL	UL
<b>FMA Area</b>	10	16	14	25	53	82
<b>Peace</b>	14	23	13	25	52	73
<b>Puskwaskau</b>	14	23	13	25	52	73
<b>Main</b>	9	15	14	25	53	83
<b>Notes:</b> LL= Lower Limit; UL= Upper Limit						

### Means of Achieving Objective & Target (Strategies)

The model used for the FMP Timber Supply Analysis (TSA) was constrained to achieve the targeted natural disturbance patch size classes defined in Table 5 over the 200-year planning horizon. The outputs of the Preferred Forest Management System (PFMS) are summarized in Table 6, which demonstrates that through the 200-year planning horizon patch size distribution is trending towards the natural levels. Actual harvest levels will be compared to the SHS of the PFMS to ensure that the patch size distribution meets the levels identified in Table 6 and is therefore trending towards the natural levels identified in Table 5 over the long-term.

### Current Status

The current patch size distribution is illustrated in Table 6.

### Forecast

The natural range of patch size distribution as outlined in Table 5 will be achieved, over the 200-year planning horizon.

**Table 6. Current and Forecast Patch Size Distribution**

Area	Period	Percent		
		0_100	100_500	500+
DFA	Baseline	68	28	4
	2014 TY	68	28	4
	2015 TY	58	34	8
	Current (2016TY)	55	37	9
	10	30	36	34
	20	19	28	53
	50	21	25	55
	100	17	24	58
	200	17	24	59
Main	Baseline	80	20	0
	2014 TY	79	21	0
	2015TY	58	34	8
	Current (2016TY)	54	37	8
	10	30	38	32
	20	19	29	53
	50	20	25	54
	100	16	25	59
	200	17	25	58
Peace	Baseline	79	21	0
	2014 TY	86	14	0
	2015 TY	46	24	30
	Current (2016TY)	46	23	30
	10	31	15	54
	20	11	22	67
	50	19	20	62
	100	21	13	66
	200	15	15	70
Puskwaskau	Baseline	86	14	0
	2014 TY	85	15	0
	2015 TY	63	37	0
	Current (2016TY)	62	38	0
	10	27	20	53
	20	24	26	49
	50	23	23	54
	100	23	24	53
	200	23	25	52

## **Legal Requirements**

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 1.1.1.2a*

## **Monitoring & Measurement**

### **Annual:**

The timber supply model forecasts the area of old interior forest by Natural Region from the PFMS. Checks will be completed annually to verify trend towards meeting predicted levels and reported in the APMR.

## **Acceptable Variance**

+/-10% of the PFMS 10 year forecast

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 1.1.3c) Seral Stage

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.1:</b> Ecosystem Diversity
<b>Value</b>	Natural ecosystems on the landscape
<b>Objective</b>	All ecosystems are represented on the landscape at current levels
<b>CSA Core Indicator</b>	1.1.3 Forest area by seral stage or age class
<b>Indicator Statement</b>	<b>Percent of area of pioneer, young and old forest by Natural Region across the Defined Forest Area (AFMPS VOIT 1.1.1.1)</b>
<b>Description of indicator</b>	Seral stages are defined by the age of the stand at breast height for different yield groups. The breast height age ranges used to define seral stages are presented in Table 8. Seral stage distribution “is important for the conservation of biodiversity because it enables timber harvests to be planned so as to maintain a full range of successional habitats for wildlife and ecosystem types over the long-term” (CCFM, 1997).
<b>Target</b>	<b>100% of pioneer, young and old forest by Natural Region will meet the Preferred Forest Management Scenario forecast</b>
<b>Description of target</b>	The landbase summaries from the Alberta Vegetation Inventory will provide the amount of old, mature, and young forest within the gross and net landbases. The models used to determine the Annual Allowable Cut will be constrained to ensure that seral stage targets are achieved.

#### **Basis for the Target**

Seral stage targets are based on the natural range of variation and the assumption that all native species and ecological processes are more likely to be maintained if managed forests are made to resemble forests created by natural disturbance agents, such as wildfires and wind. If anthropocentric disturbance regimes mimic naturally occurring disturbances we are more likely to achieve biodiversity objectives over the long-term.

Historically in Alberta, the Boreal Forest and the Foothills Natural Regions experienced frequent wildfires that ranged in size from small spot fires to large fires covering thousands of hectares. Natural burns generally contained unburned patches of forest, which result in a landscape of even-aged regenerating stands containing older patches of remnant forest. The implementation of a fire suppression policy circa 1950, timber harvesting, and other industrial activities all had an impact on the makeup of the forest in the DFA. Effective fire suppression within Canfor’s DFA resulted in an average annual burn rate of 34 ha/year between 1987-2017.

The following describes the process used to determine the seral stage distribution for the Forest Management Agreement area under a historic natural disturbance regime.

**Spatially Explicit Landscape Event Simulator (SELES)**

The Spatially Explicit Landscape Event Simulator (SELES) model was used as a tool to investigate the effect of natural disturbances and succession on the landbase. The model tests hypotheses about landscape dynamics and characterizes natural disturbance regimes in order to determine the natural range of variability (NRV) of forest seral stage, and subsequently to develop seral stage targets.

**SELES Model Parameters**

The dataset used was derived from the TSA dataset and converted into ASCII files for the 3 fields of interest: age, species, and yield group. The model includes 2 landscape events: succession and fire. The succession event ages each forested stand each year with no limits for maximum stand age or species change over time. The fire event is dependent on user defined inputs: average fire size, fire cycle or fire return interval (FRI), and mean fires per year (Table 7). It was not dependent on any other variables such as aspect, elevation or species. Mean fire size was sourced from literature and the formula to calculate mean fires per year was sourced from the 'v5\_fire2' fire model.

$$\text{Mean Fires Per Year} = \text{ForestSize} / (\text{FireCycle} * \text{MeanFireSize})$$

**Table 7. SELES Fire Input Assumptions**

Ecozone	GPFMA unit	Forest Size (ha)	Mean Fire Size	Fire Cycle	Mean Fires Per Yr (calculated using above equation)
Boreal mixedwood	Pusk	64,756	10	40, 60, 80	162, 108, 81
Lower foothills	Main	293,470	20	60, 80, 100	245, 183, 147

For each ecozone/fire cycle combination, twenty 1,000 year iterations were run to determine summary statistics for seral stage age range (minimum, maximum, median, mean, and standard deviation). The impact on timber supply was examined by using alternative percentage values for each seral stage age range.

**Seral Stage Definitions**

The five seral stage categories identified in Table 8 have defined age ranges depending on the yield group to which a stand belongs. These age ranges reflect total stand age and have been adjusted from previous analyses to include the years to breast height and to be consistent with the yield curves used in the forest estate model. These seral stage ranges were used to summarize the results of the fire return interval modelling.

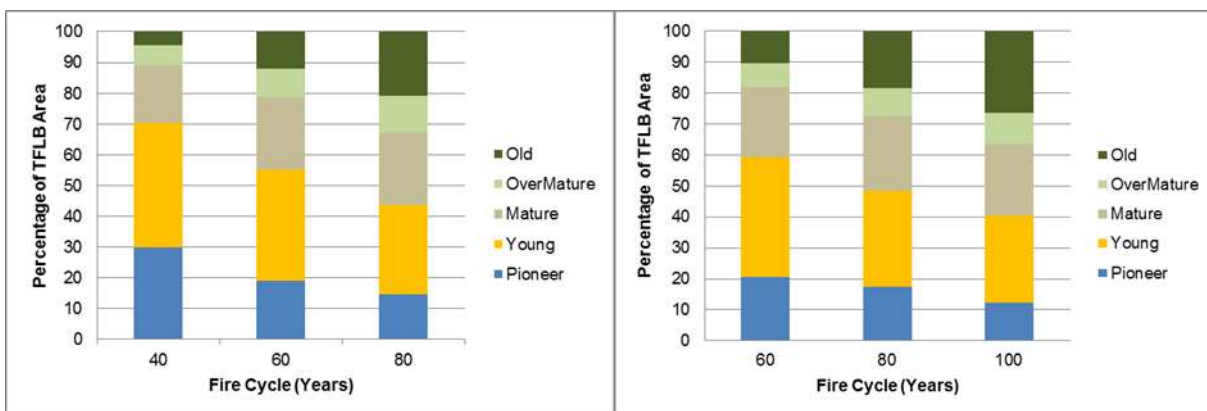


**Table 8. Seral Stage Age by Yield Group**

Yield Group	Species	Seral Stage Categories (Yrs)					Years to BH
		Pioneer	Young	Mature	O.Mature	Old	
1	AW	0-6	7-26	27-76	77-116	117+	6
2	AW	0-6	7-26	27-76	77-116	117+	6
3	SW	0-15	16-55	56-95	96-135	136+	15
4	BW	0-6	7-26	27-76	77-116	117+	6
5	FB	0-15	16-55	56-115	116-135	136+	15
6	SW	0-15	16-55	56-95	96-135	136+	15
7	PB	0-6	7-26	27-86	87-116	117+	6
8	PL	0-10	11-50	51-90	91-130	131+	10
9	PL	0-10	11-40	41-80	81-130	131+	10
10	PL	0-10	11-50	51-100	101-130	131+	10
11	PL	0-10	11-50	51-100	101-130	131+	10
12	SB	0-20	21-70	71-150	151-170	171+	20
13	SB	0-20	21-70	71-160	161-180	181+	20
14	SB	0-20	21-60	61-120	121-150	151+	20
15	SW	0-15	16-55	56-105	106-135	136+	15
16	SW	0-15	16-55	56-105	106-135	136+	15
17	SW	0-15	16-55	56-105	106-135	136+	15

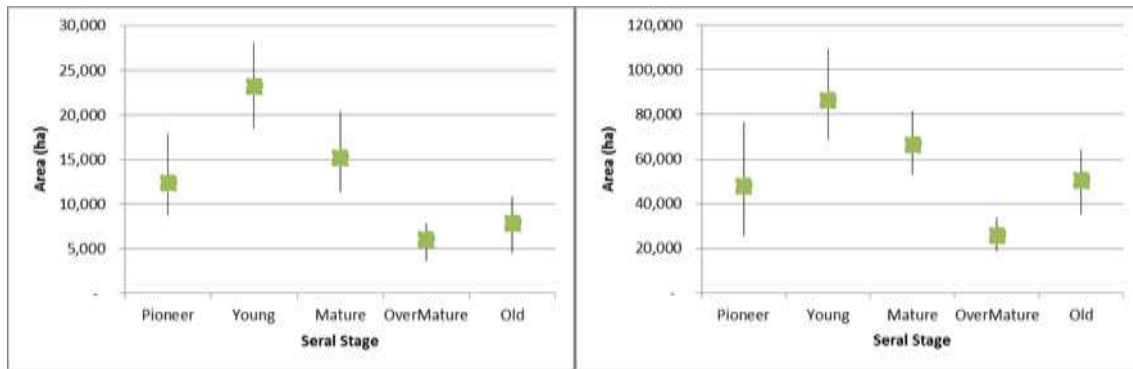
**SELES Results**

The mean percentages in each seral stage from the SELES runs are shown in Figure 7. As FRI increases, the percentage in older seral stages also increases. For Boreal, the average percentage in old seral forest varies from 5%, 12% and 21% for FRIs of 40, 60 and 80 years. In the Foothills, the average percentage in old seral forest varies from 10%, 18% and 26% for FRIs of 60, 80 and 100 years.



**Figure 7: Comparison of Mean Values by FRI for the Boreal (LHS) and Foothills (RHS) Natural Regions**

Each set of SELES runs also have minimum and maximum values around the mean as shown graphically in Figure 8 for the Boreal FRI 60 years and Foothills FRI 80 years.



**Figure 8: Minimum, Mean, and Maximum Area for Boreal FRI 60yrs (LHS) and Foothills FRI 80yrs (RHS) Natural Regions**

Previous seral stage targets were based on a 40 year FRI in the Boreal Forest and 60 year FRI in Foothills and are similar to the corresponding mean FRI values from SELES. Feedback on these targets suggests that these FRIs may be too short, as a lower FRI indicates more frequent fires on the landbase which creates less old seral forest. In order to achieve increased levels of old seral forest the seral stage targets are based on an FRI of 60 years in the Boreal and 80 years in the Foothills.

By applying mean and maximum NRV values from the SELES analysis as minimums in the TSA we are saying that over the 200-year planning horizon old values can never fall below the maximum or mean NRV values and that the landscape will never experience the full range of NRV. By applying the minimums of the NRV from SELES as minimums in the TSA model we achieve results that are closer to the NRV. Only pioneer, young, and old targets were enforced in the TSA model as it was determined that if these targets are met, then the mature and over-mature targets would subsequently be met as well.

Within in the Foothills Natural Region old seral levels trended towards the minimum values for the majority of the 200-year planning horizon. Based on this, the old seral targets were adjusted to be at the mean values but the model was allowed to violate these constraints while always attempting to minimize these violations thereby increasing the older seral harvest levels to be closer to the NRV.

Within the Boreal Mixedwood Natural Region the application of minimum values in the model resulted in an old seral distribution that was closer to the NRV with no further modifications to the targets required (Table 9).

**Table 9 Application of SELES Results to Seral Stage Targets**

Seral Stage	Boreal Mixedwood (%Area)										
	Previous Targets (FRI@40)	Mean			Low Range NRV			High Range NRV			Proposed Change (%)
		FRI (Years)			FRI (Years)			FRI (Years)			
	40	60	80	40	60	80	40	60	80		
Pioneer	22	30	19	14	41	28	23	21	13	11	-3
Young	44	40	36	29	51	43	35	30	28	23	-8
Mature	25	19	24	24	15	18	17	24	31	26	-2
Over Mature	5	7	9	12	4	6	10	11	12	14	4
Old	4	5	12	21	2	7	16	8	17	27	8

Seral Stage	Foothills (%Area)										
	Previous Targets (FRI@40)	Mean			(Low Range NRV)			(High Range NRV)			Proposed Change (%)
		FRI (Years)			FRI (Years)			FRI (Years)			
	60	80	100	60	80	100	60	80	100		
Pioneer	15	21	17	12	30	28	18	13	9	8	2
Young	42	39	31	28	48	39	34	31	25	19	-11
Mature	25	23	24	23	17	19	18	28	29	30	-1
Over Mature	7	8	9	10	5	7	7	11	12	13	2
Old	10	10	18	26	8	13	23	14	23	31	8

**Table 10 Seral Stage Targets**

Seral Stage	Boreal (% Area)
	FRI (60 Years)
Pioneer	28
Young	43
Mature	18
Over Mature	6
Old	7
Seral Stage	Foothills (% Area)
	FRI (80 Years)
Pioneer	17
Young	31
Mature	24
Over Mature	9
Old	18

## Means of Achieving Objective & Target (Strategies)

The TSA outlines current and future seral stage distribution of the PFMS over the 200-year planning horizon. Actual harvest levels will be compared to the SHS of the PFMS to ensure that the seral stage distributions by Natural Regions meet the levels identified in Table 11 and is therefore achieving the natural levels identified in Table 10 over the long-term.

### Current Status

The current distribution of gross forest landbase by seral stage is illustrated in Table 11.

### Forecast

The natural range of seral stage distribution will be achieved as outlined in Table 11, over the 200-year planning horizon.

**Table 11. Percentage Distribution of Gross Forested Landbase By Seral Stage**

Natural Region	Year	Percent by Area				
		Pioneer	Young	Mature	O. Mature	Old
Boreal	Baseline	5%	8%	55%	28%	4%
	2014 TY	5%	8%	55%	28%	4%
	2015 TY	5%	8%	51%	30%	7%
	Current (2016TY)	5%	8%	46%	32%	9%
	10	8	11	45	28	8
	20	11	17	37	26	8
	50	18	23	22	26	12
	100	11	34	38	4	12
	200	13	31	39	4	12
Foothills	Baseline	10%	18%	32%	29%	11%
	2014 TY	10%	18%	32%	30%	11%
	2015 TY	10%	18%	30%	28%	13%
	Current (2016TY)	10%	19%	30%	28%	14%
	10	13	22	27	24	14
	20	14	25	26	19	15
	50	17	31	26	11	14
	100	18	35	29	2	15
	200	25	35	23	1	16

### Legal Requirements

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 1.1.1.1*

## **Monitoring & Measurement**

### **Annual:**

Harvested areas will be compared to the SHS of the PFMS annually to ensure that the seral stage distribution by Natural Region are trending towards the natural levels identified in Table 10 over the long-term and reported in the APMR.

## **Acceptable Variance**

+/-20% of the PFMS 10 year forecast

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 1.1.4a) Structural Retention

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.1:</b> Ecosystem Diversity
<b>Value</b>	Natural ecosystems on the landscape
<b>Objective</b>	All ecosystems are represented on the landscape at current levels
<b>CSA Core Indicator</b>	1.1.4 Degree of within-stand structural retention
<b>Indicator Statement</b>	<b>Percent of representative merchantable area of the total annual harvested area retained as structure retention across the Defined Forest Area (AFMPS VOIT 1.1.2.1a)</b>
<b>Description of indicator</b>	The % amount of internal merchantable patch and dispersed retention retained as structure retention across the Defined Forest Area
<b>Target</b>	<b>On a 5-year rolling average, no less than 4% of the area (ha) harvested will be retained as representative merchantable patch and dispersed structure retention across the Defined Forest Area</b>
<b>Description of target</b>	Merchantable structure retention (standing trees) will be left standing within the boundaries of harvested areas to maintain ecological representation across the landscape.

### **Basis for the Target**

Natural disturbances (i.e. fire, floods, avalanches, wind events, insects and disease infestations) rarely kill all trees within the disturbed area. Within all disturbance types, “skips” or “islands” result in patches of live trees remaining within disturbed areas. The retention of single live trees and patches of live merchantable trees in harvest areas creates habitat in the harvested areas that is similar to that found within burned and other naturally disturbed areas.

Complexity of stand structure is a key component of an operational strategy to sustain biodiversity in forested ecosystems (Bunnell & Vernier, 2007). This approach can utilize a broad spectrum of retention strategies, with varying amounts, types and spatial patterns.

Patches of residual structure provide thermal and protective cover for many wildlife species and can be used to protect sites of biological significance and unique features, maintain hydrological values, maintain interior forest characteristics, and act as corridors for wildlife migration. Dispersed retention provides additional stand level complexity and long-term recruitment of course woody debris, which is very important in maintaining biological diversity.

## Means of Achieving Objective & Target (Strategies)

The design and layout phase will identify planned merchantable patch retention. Planned patches may be selected for a variety of reasons including: additional watercourse buffers, machine free zones, steep slopes, raptor nests, seepage areas, cabins, etc. Dispersed retention will be left when trees and snags of high value (nests, cavities) have been identified and in areas of high migratory bird value during summer operations. Areas will be classified as non-merchantable and merchantable for the purpose of calculating area retained.

## Current Status

The total harvested area from May 1, 2014 to April 30, 2016 was 5009.8 ha; therefore 9.2% of the total area was left as patch and dispersed structural merchantable retention.

**Table 12. Percent Structure Retention**

Year	Total Area Harvested (Ha)	Patch Merchantable Retention (Ha)	Dispersed Merchantable Retention (Ha)	Total Merchantable Retention (Ha)	Percent Merchantable Retention
2014T Y	1,844.0	100.7	86.5	187.2	10.2%
2015T Y	3,165.9	161.7	114.0	275.7	8.7%
<b>Total</b>	<b>5,009.8</b>	<b>262.4</b>	<b>200.5</b>	<b>462.9</b>	<b>9.2%</b>

## Forecast

By following the “Means of Achieving Objective and Target (Strategies), sections of this indicator, healthy ecosystems with a diversity and abundance of native species and habitats will be maintained.

## Legal Requirements

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards;*

## Monitoring & Measurement

### Annual:

Structure retention will be calculated on previous year’s harvested blocks using digital photo imagery and results will be reported in the APMR. The APMR will list current and historical retention achievement as a summary for all harvested areas in a given year.

## Acceptable Variance

No less than 3.0% of the 5-year rolling average harvested area (ha) will be left as merchantable representative patch and dispersed structural retention.

## Response

Adjust activities.



### **1.1.4b) Balancing Fibre and Ecological Factors in Burned Forests**

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.1:</b> Ecosystem Diversity
<b>Value</b>	Natural ecosystems on the landscape
<b>Objective</b>	All ecosystems are represented on the landscape at current levels
<b>CSA Core Indicator</b>	1.1.4 Degree of within-stand structural retention
<b>Indicator Statement</b>	<b>Area of un-salvaged burned forest (AFMPS VOIT 1.1.1.5a)</b>
<b>Description of indicator</b>	Forest fires are naturally occurring events. Traditionally, where burned areas of merchantable trees were large enough to justify operations, salvage logging recovered most of the timber. The indicator will track areas that have burned versus those that have been salvage logged in burned areas.
<b>Target</b>	<b>100% of burned areas that have salvage plans will be implemented in compliance with the Government of Alberta directive</b>
<b>Description of target</b>	The Government of Alberta, Forest Management Branch, Directive 2007-1 (AESRD, 2007b), directs salvage plans and retention required depending on burn size. All salvage plans will follow the directive.

#### **Basis for the Target**

Salvaging of fire killed timber to maintain forest growth must be balanced with allowing some burned areas to remain as habitat for plants and animals that require freshly burned forest for their survival. Following the Directive will ensure that this balance is attained.

#### **Means of Achieving Objective & Target (Strategies)**

Fire histories are obtained from the Province. Salvage plans will be developed and implemented as per the Government of Alberta's, Forest Management Branch *Fire Salvage Planning and Operations Directive 2007-1* (AESRD, 2007b), which directs salvage planning and operations. Meeting the intent of the Directive, Canfor Alberta will:



- *Submit a written notice of intent to salvage and will submit a Fire Salvage Plan to GoA;*

- *Operational planning on fires less than 1000 ha: follow the normal Canfor Timber Harvest Planning and Operating Ground Rules (GoA, 2016) retention strategies. Both green and burned patches may be selected for retention;*
- *Fires between 1000 and 10,000 ha: Retain all unburned, wind-firm, islands in patches larger than 2 ha up to a minimum of 10% and a maximum of 25%. Total retention will be between 10% and 25% of the merchantable-forested area, so burned timber areas will be retained where there are insufficient green tree patches; and*
- *Fires larger than 10,000 ha: A minimum of 25% of the merchantable area will be retained. The method of retention will be as per the Directive (AESRD, 2007b).*

## **Current Status**

There were no fires requiring salvage on the DFA during the 2016 timber year. In 2013, Canfor salvaged a 492ha fire in accordance with the *Fire Salvage and Operations Directive 2007-1*.

## **Forecast**

By following the *Fire Salvage Planning and Operations Directive 2007-1*, it is anticipated that forest growth will be maintained and balanced to allow some burned areas to remain as habitat for plants and animals that benefit from such areas.

## **Legal Requirements**

*Alberta Environment and Sustainable Resource Development, Forest Management Branch, Fire Salvage Planning and Operations Directive 2007-1; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 1.1.1.5a*

## **Monitoring & Measurement**

### **Annual:**

Fire histories are obtained from the Province. The Province will not approve salvage plans if they do not meet the Directive therefore; approval of the salvage plan denotes that the Directive was followed. All burned areas planned for salvage operations will have approved salvage plans.

All fires larger than 10 ha in merchantable stands will be reported in the APMR. When fire salvage operations occur on the DFA, the total burned area and area not harvested will also be reported in the APMR.

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **1.1.4c) Balancing Fibre and Ecological Factors in Blowdown Forest Areas**

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.1:</b> Ecosystem Diversity
<b>Value</b>	Natural ecosystems on the landscape
<b>Objective</b>	All ecosystems are represented on the landscape at current levels
<b>CSA Core Indicator</b>	1.1.4 Degree of within-stand structural retention
<b>Indicator Statement</b>	<b>Area of un-salvaged blowdown (AFMPS VOIT 1.1.1.5b)</b>
<b>Description of indicator</b>	Blowdown of the trees in a forest is a natural event that may be stand replacing. Traditionally, where blowdown areas were large enough to justify operations, salvage logging recovered most of the timber. The indicator will track areas of blowdown greater than 10 ha observed in the field and the percentage of those areas that are salvage logged.
<b>Target</b>	<b>In areas with significant blowdown (&gt;10ha), a minimum of 25% of the area will be left un-salvaged</b>
<b>Description of target</b>	All areas of blowdown greater than 10 ha will be tracked and reported annually in the Annual Performance Monitoring Report. The area of those blowdown patches will also be reported. At least 25% of the reported blowdown areas will be left un-salvaged. The target will be on a cumulative area of blowdown and salvage logging.

#### **Basis for the Target**

Salvaging of blowdown timber to maintain forest growth must be balanced with allowing some blowdown areas to remain as habitat for plants and animals that require blowdown habitat for their survival as identified in Annex 4 of the *Alberta Forest Management Planning Standard* (GoA, 2006).

#### **Means of Achieving Objective & Target (Strategies)**

Staff or government may identify areas of blowdown during their field duties. All areas larger than 10 ha will be tracked and summarized in the APMR. Salvage plans will ensure that at least 25% of the cumulative area is not salvaged.

## **Current Status**

No major blowdown events >10 ha have been reported on the Forest Management Agreement area since 2006.

## **Forecast**

By following the “Means of Achieving Objective and Target (Strategies)” sections of this indicator, it is anticipated that forest growth will be maintained and balanced to allow some blowdown areas to remain as habitat for plants and animals that benefit from such areas.

## **Legal Requirements**

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 1.1.1.5b*

## **Monitoring & Measurement**

### **Annual:**

Areas of blowdown >10 ha will be reported in the APMR. The cumulative area of blowdown versus the area salvaged will be expressed as a percent.

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

**1.2.1a) Trumpeter Swans**

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.2 Species Diversity</b>
<b>Value</b>	Through time, all current habitats are represented
<b>Objective</b>	Habitat for focal species is maintained on the landscape
<b>CSA Core Indicator</b>	1.2.1 Degree of habitat protection for selected focal species, including species at risk
<b>Indicator Statement</b>	<b>Trumpeter Swan habitat maintained (AFMPS VOIT 1.2.1.1)</b>
<b>Description of Indicator</b>	Trumpeter swans once ranged widely across North America. However, by the early 1900s, a combination of habitat destruction and hunting extirpated the species from much of its range. In recent decades, through active management and restoration efforts, trumpeter swan populations have regained some of their former abundance and distribution (Smith, 2013).
<b>Target</b>	<b>No future winter harvest within 200 m and no summer harvest within 800 m of provincially identified Trumpeter Swan sites</b>
<b>Description of Target</b>	Two hundred meter “no harvest” buffers and no summer harvesting within 800 m around identified Trumpeter Swan areas protect nesting sites, unless changes are recommended or approved by GoA.

**Basis for the Target**

Trumpeter swans are sensitive to human disturbance, and human activity in breeding areas may decrease survival of eggs or cygnets. Trumpeter swans that are disturbed may not nest or may abandon an existing nest. Therefore, the breeding population continues to be dependent on current management practices and habitat protection. In order to minimize habitat disturbance, forest companies operating on the DFA have committed to “no timber harvesting within 200 m from the high water mark and no summer harvesting within 800 m of identified trumpeter swan lakes or water bodies” in the *Canfor Timber Harvest Planning and Operating Ground Rules* (GoA, 2016) to avoid disturbing trumpeter swans during the breeding season.



## **Means of Achieving Objective & Target (Strategies)**

Canfor staff will check annually in the spring with Alberta Environment and Parks for any new or excluded trumpeter swan sites in the DFA. At the preliminary design phase, those trumpeter swan sites will be identified and a no harvest buffer within 200 m of site during winter harvest and 800 m during summer harvest will be planned. At the strategic level, the trumpeter swan buffer areas will be withdrawn from the timber harvesting landbase.

## **Current Status**

Until 2014, trumpeter swans were listed as Threatened under the Wildlife Act. Due to effective management practices and increasing populations, the species was down listed in 2014 to a Species of Special Concern on the Alberta Species at Risk list. There is a relatively healthy population of trumpeter swans on the DFA. There are 92 trumpeter swan breeding lakes requiring 200 m and 800 m buffers in the DFA.

Of the 3321 ha harvested in the 2015 timber year, there was no harvesting within the 200 m winter trumpeter swan buffers or the 800 m summer trumpeter swan buffers.

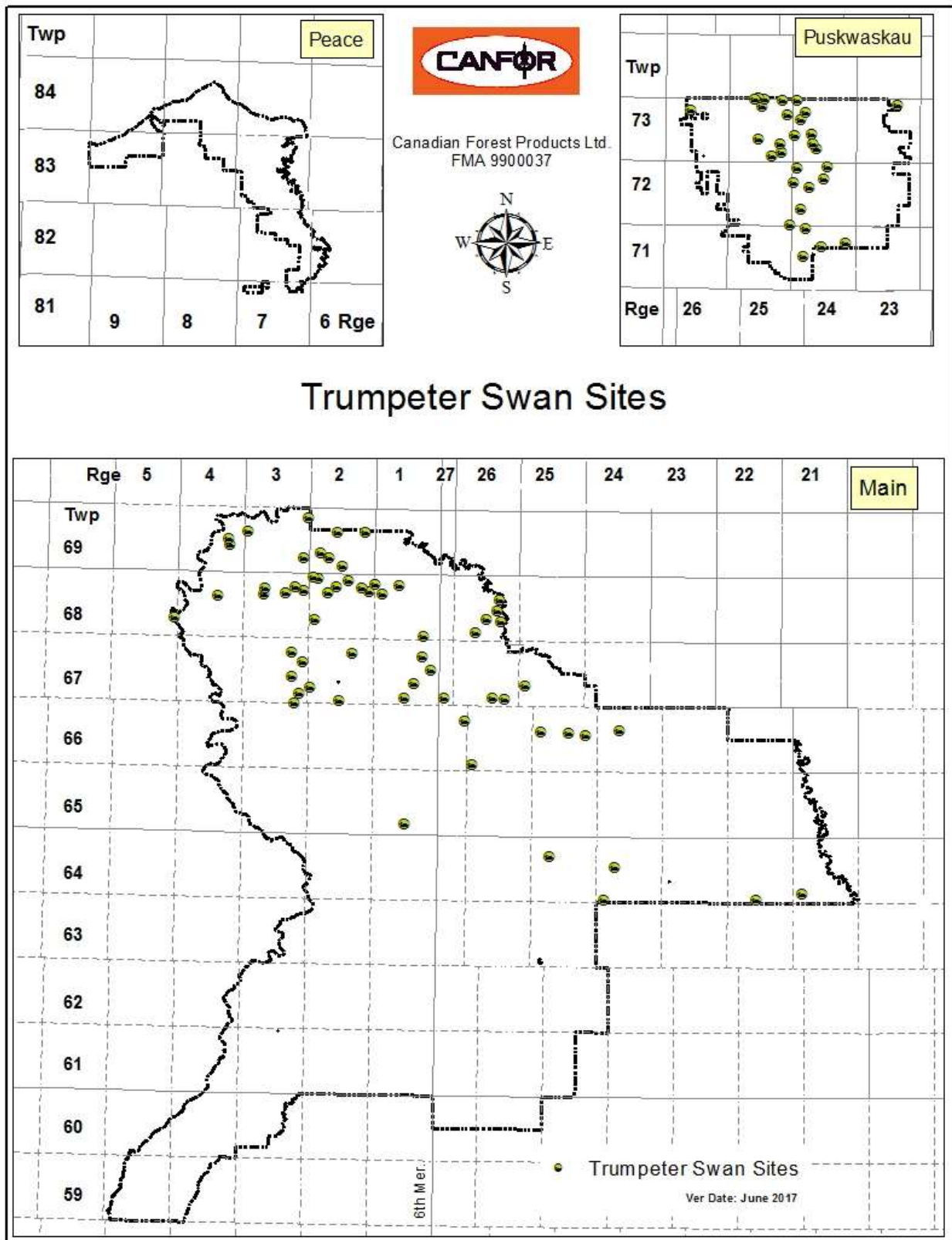


Figure 9: Trumpeter Swan Sites Within the DFA

## **Forecast**

Through maintaining a 200 m “no harvest” and 800m no summer harvest buffer around all spatially identified Trumpeter Swan breeding sites, disturbance will be minimized and nesting habitat will be sustained.

## **Legal Requirements**

*Canfor Timber Harvest Planning and Operating Ground Rules;*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 1.2.1.1;*

*Federal Species at Risk Act; and*

*Alberta Wildlife Act*

## **Monitoring & Measurement**

### **Annual:**

Intersect the previous season’s harvested blocks with trumpeter swan buffers after cutover updates have been completed. Any overlap will be considered as an infraction, unless approved in the Forest Harvest Plan for some overriding reason. Infractions will be recorded in Canfor’s Incident Tracking System (ITS) and reported in the APMR.

## **Acceptable Variance**

No variance unless there is an approved ground rule deviation.

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.



**1.2.1b) Mineral Licks**

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.2 Species Diversity</b>
<b>Value</b>	Through time, all current habitats are represented
<b>Objective</b>	Current species diversity is maintained on the landscape
<b>CSA Core Indicator</b>	1.2.1 Degree of habitat protection for selected focal species, including species at risk
<b>Indicator Statement</b>	<b>Percentage of significant wildlife mineral licks conserved (AFMPS VOIT 1.1.2.2)</b>
<b>Description of indicator</b>	<p>Canfor Alberta has been using the following definition for the term “Significant Mineral Lick”:</p> <p><i>An area used by ungulates to obtain dietary macro minerals including sodium, calcium and phosphorous as well as trace minerals such as manganese, copper and selenium that is (a) regionally rare on the landscape; or (b) used annually by more than one species; or (c) used by a large proportion of individuals within a species.</i></p> <p><i>Three types of mineral licks are generally recognized: (i) wet or mucky licks found in seepage areas; (ii) dry earth exposures such as clay or lacustrine deposits found above river cutbanks; and (iii) rock face licks. Although mineral licks are typically used by ungulates during the spring and early summer seasonal periods, some ungulates may also use mineral licks during the summer and fall months.</i></p> <p><i>Some include water source areas that do not freeze during winter providing year round benefits. In order to be significant, licks must be used by wildlife on a regular basis (Canfor, 2006).</i></p>
<b>Target</b>	<b>100% of significant wildlife mineral licks will be conserved annually, consistent with Operating Ground Rules</b>
<b>Description of target</b>	Significant wildlife mineral licks are identified operationally during reconnaissance and harvest area layout. Licks are protected with a 100 m “no harvest” buffer. They are not explicitly identified on maps as they are subject to broader public disclosure and associated risk to sensitive feature disturbance.

## Basis for the Target

Conserving wildlife mineral licks will assist in maintaining wildlife species diversity and habitat.

## Means of Achieving Objective & Target (Strategies)

*Canfor Timber Harvest Planning and Operating Ground Rules (GoA, 2016)* incorporate mineral licks as sensitive sites. One hundred meter “no harvest” buffers are generally the minimum protection standard and may be larger depending on specific circumstances.

Management activities include identification, verification and buffering of significant wildlife mineral licks. Field staff are trained in the identification of wildlife mineral licks. Information on identifying wildlife licks, as well as other wildlife areas, are provided to all field layout staff and contractors.



## Current Status

To date 106 significant wildlife mineral licks have been conserved within the DFA.

## Forecast

By following the “Means of Achieving Objective and Target (Strategies)” sections of this indicator, it is anticipated that wildlife species diversity and habitat will be maintained through the conservation of wildlife mineral licks.

## Legal Requirements

*Canfor Timber Harvest Planning and Operating Ground Rules; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standard 1.1.2.2*

## Monitoring & Measurement

### Annual:

The sites are spatially stored in Canfor Alberta’s GIS and new sites are updated annually. All blocks from the previous year that have cutover updates completed, will be spatially compared to Canfor’s Area of Concern layer to ensure that no infraction has occurred unless approved in the Forest Harvest Plan for some overriding reason. Infractions will be recorded in Canfor’s Incident Tracking System (ITS) and reported in the APMR.

## Acceptable Variance

No variance unless there is an approved ground rule deviation

## Response

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

**1.2.2a) Caribou**

<b>Criterion 1: Biological Diversity</b>	<b>Element 1.2 Species Diversity</b>
<b>Value</b>	Through time, all current habitats are represented
<b>Objective</b>	Habitat for focal species is maintained on the landscape
<b>CSA Core Indicator</b>	1.2.2 Degree of suitable habitat in the long-term for selected focal species, including species at risk
<b>Indicator Statement</b>	<b>Sufficient amount of functional Woodland Caribou habitat over time (AFMPS VOIT 1.2.1.1)</b>
<b>Description of indicator</b>	Woodland caribou in Alberta have a legal designation of <i>Threatened</i> under the provincial <i>Wildlife Act</i> , and nationally across Canada under the Federal <i>Species at Risk Act</i> . Functional woodland caribou habitat consists of a range of forested landscapes that supports the maintenance or enhancement of a self-sustaining population (Antoniuk, Dzus, & Nishi, 2011).
<b>Target (1)</b>	<ul style="list-style-type: none"> <li>• <b>No timber harvesting will occur in the Conservation zone identified within the Little Smoky/A La Peche ranges for the period of May 1, 2014-April 30, 2024</b></li> <li>• <b>No timber harvesting will occur in the Timber Supply Subunits DS3, DS4 and DS5 within the Little Smoky range for the period May 1, 2014-April 30, 2019</b></li> <li>• <b>No timber harvesting will occur in the Timber Supply Subunits DS1, DS2 DS6 and DS7 within the Little Smoky range for the period May 1, 2014-April 30, 2024</b></li> </ul>
<b>Target (2)</b>	<b>All future areas harvested, excluding the deciduous broad cover group, in all identified Caribou Management Zones will be reforested to a coniferous standard to reduce alternate prey habitat</b>
<b>Target (3)</b>	<b>Canfor Alberta will have zero future contribution to open-route density south of Deep Valley Creek</b>

<p><b>Description of targets</b></p>	<ol style="list-style-type: none"> <li>1) The concept of “habitat intactness” was first introduced in the <i>West-Central Alberta Caribou Landscape Plan</i> (WCACLPT, 2008) and the <i>Recommendations for a West-Central Alberta Caribou Landscape Plan proposed by the Alberta Caribou Committee Governance Board</i> (ACC-Recommendations) (ACCGB, 2008)). The plans identified high, medium and low intactness zones based on the relative level of anthropogenic disturbance that has occurred on the landscape.  Following previous caribou range planning exercises, Canfor developed a zonation approach for use in the 2015 Forest Management Plan (FMP) and for input into the Little Smoky/A La Peche Caribou Range Plan; using known caribou Global Positioning System points and stand merchantability criteria. Each zone has a different forest management approach. The Conservation zone is the primary core area being used by the caribou. The commitment to forego timber harvesting in the Conservation Zone and certain Timber Supply Subunits for an extended period of time assists in the maintenance of existing caribou habitat values and works towards achieving the Federal Recovery Strategy Target of reducing habitat disturbance in the range to 65%.</li> <li>2) Recently harvested blocks create ideal vegetation for alternate prey (moose and deer). As the moose and deer populations increase so does the wolf population, which has a direct, impact on caribou populations. In order to reduce the amount of alternate prey habitat that is maintained and created within the Caribou Management Area, the Forest Management Plan Preferred Forest Management Strategy includes the assumption that vegetation management control will be implemented on all new harvest areas to reduce the amount of alternate prey habitat created by promoting more coniferous forest.</li> <li>3) The ACC-Recommendations (ACCGB, 2008) document states that research has demonstrated that increased anthropogenic footprint, such as linear disturbances, and declining caribou populations are correlated. Much of the impact on caribou population caused by roads is related to the number of road users, and the length of time the road is accessible to potential users. The term “Open Route Density” refers to the kilometer of all-weather road that is accessible per square kilometer on any given landscape. Winter use roads deactivated promptly in the spring do not contribute to Open Route Density metrics.</li> </ol>
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## Basis for the Targets

Population trend data demonstrate that almost all of the monitored woodland caribou populations in Alberta are declining (some at high rates), as a result of extremely high levels of predation. Habitat change, as a result of human land use activities (e.g., timber harvesting, oil and gas exploration and development, human use of access routes) is a significant factor directly or indirectly affecting the size and distribution of woodland caribou populations and the current high levels of predation. In addition, natural processes (e.g. forest fires) have in some cases been demonstrated to negatively affect woodland caribou in Alberta. Typically, factors affecting woodland caribou are inter-related with resulting cumulative effects causing poor conditions for caribou conservation (ACCGB, 2008).

Forest tenure holder responsibilities and rights with respect to management of caribou and other wildlife are limited to manipulation of habitat conditions through the planning and implementation of timber harvesting and regeneration activities. Therefore, tenure holders have no ability to manage wildlife populations directly. However, Canfor Alberta may contribute to the effective implementation of the recommended actions by achieving the stated targets.

GoA's mission is to encourage balanced and responsible use of Alberta's natural resources. The Department is obligated to deliver its mandate of sustainable resource development by enabling access to resources and honouring existing dispositions and allocations. A key aspect of that mandate is to enable protection of the forest resource from natural disturbances such as fires, insect infestations and disease. Studies and predictive models indicate that pine stands in the caribou range area are highly susceptible to mountain pine beetle infestation and recent field observations have confirmed thriving populations of beetle across much of the range.

*A Federal Recovery Strategy for Woodland Caribou, Boreal population, in Canada* was released on October 2012. The recovery strategy has identified range plans to be completed by responsible jurisdictions within 3-5 years of the posting of the recovery strategy.

*“range plans will outline how the given range will be managed to maintain or attain a minimum of 65% undisturbed habitat over time<sup>2</sup>. Each range plan should reflect disturbance patterns on the landscape, as measured and updated by the provinces and territories, and outline the measures and steps that will be taken to manage the interaction between human disturbance, natural disturbance, and the need to maintain or establish an ongoing, dynamic state of a minimum of 65% of the range as undisturbed habitat at any point in time to achieve or maintain a self-sustaining local population”* (Env., 2011).

The Little Smoky caribou range is identified in the federal recovery strategy as 95% disturbed.

The company will apply these strategies until completion of the Little Smoky/A La Peche Caribou Range Plan, which is anticipated to be released in 2015.

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<sup>2</sup> Undisturbed is defined in the Federal Recovery Strategy for Woodland Caribou as “*The total disturbance footprint was measured as the combined effects of the fire that has occurred in the past 40 years and buffered (500 m) anthropogenic disturbance defined as any human-caused disturbance to the landscape that could be visually identified from Landsat imagery at a scale of 1:50,000*” (Env., 2011).

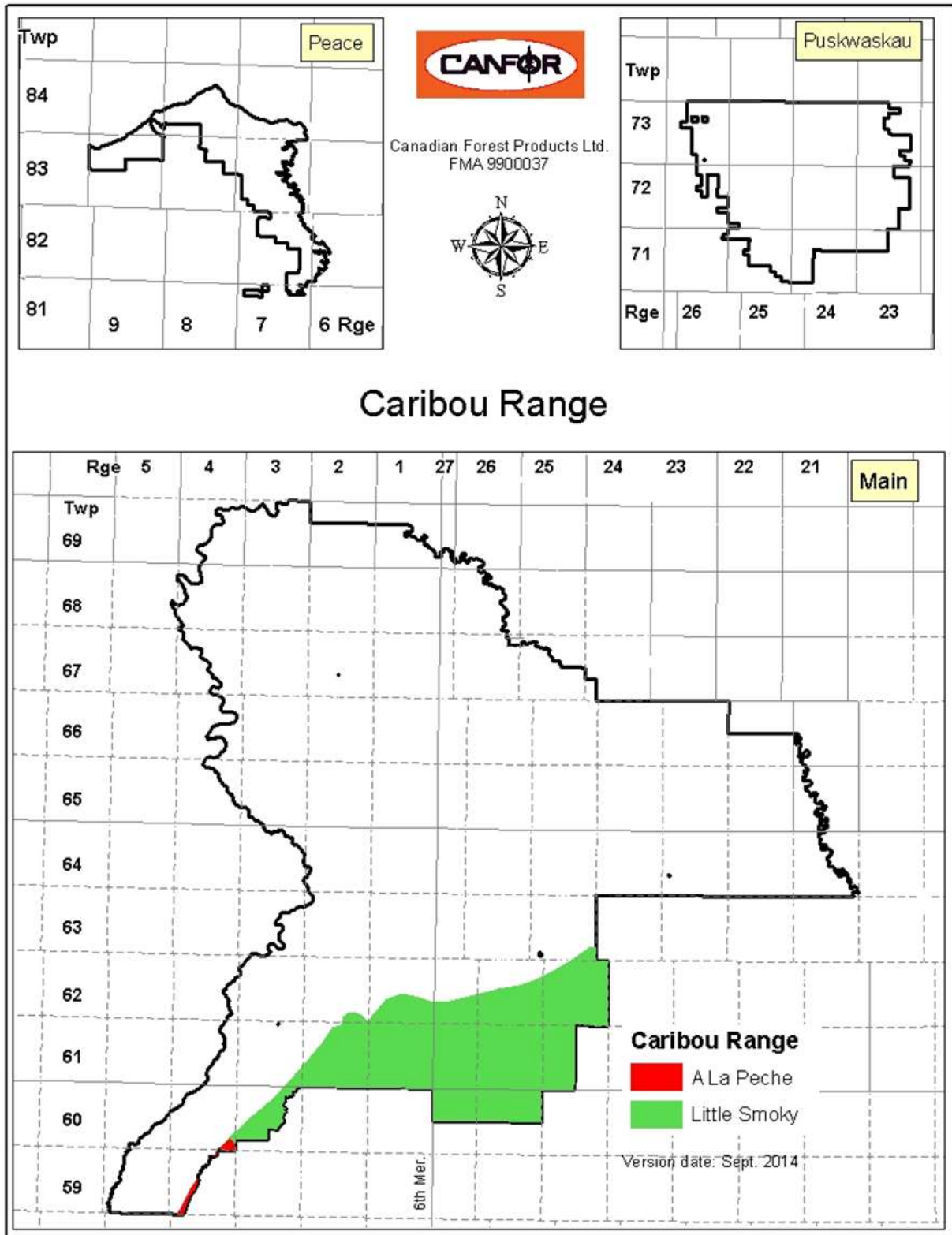


Figure 10: Little Smoky and A La Peche Caribou Range in Canfor's DFA



### Means of Achieving Objective & Target (Strategies)

Target (1) No harvesting is sequenced in the Conservation Zone within the Little Smoky/A La Peche range for the period of May 1, 2014-April 30, 2024, Timber Supply Subunits DS3, DS4 and DS5 within the Little Smoky range for the period of May 1, 2014-April 30, 2019, and in Timber Supply Sub-Units DS1, DS2 DS6 and DS7 within the Little Smoky range for the period of May 1, 2014-April 30, 2024.

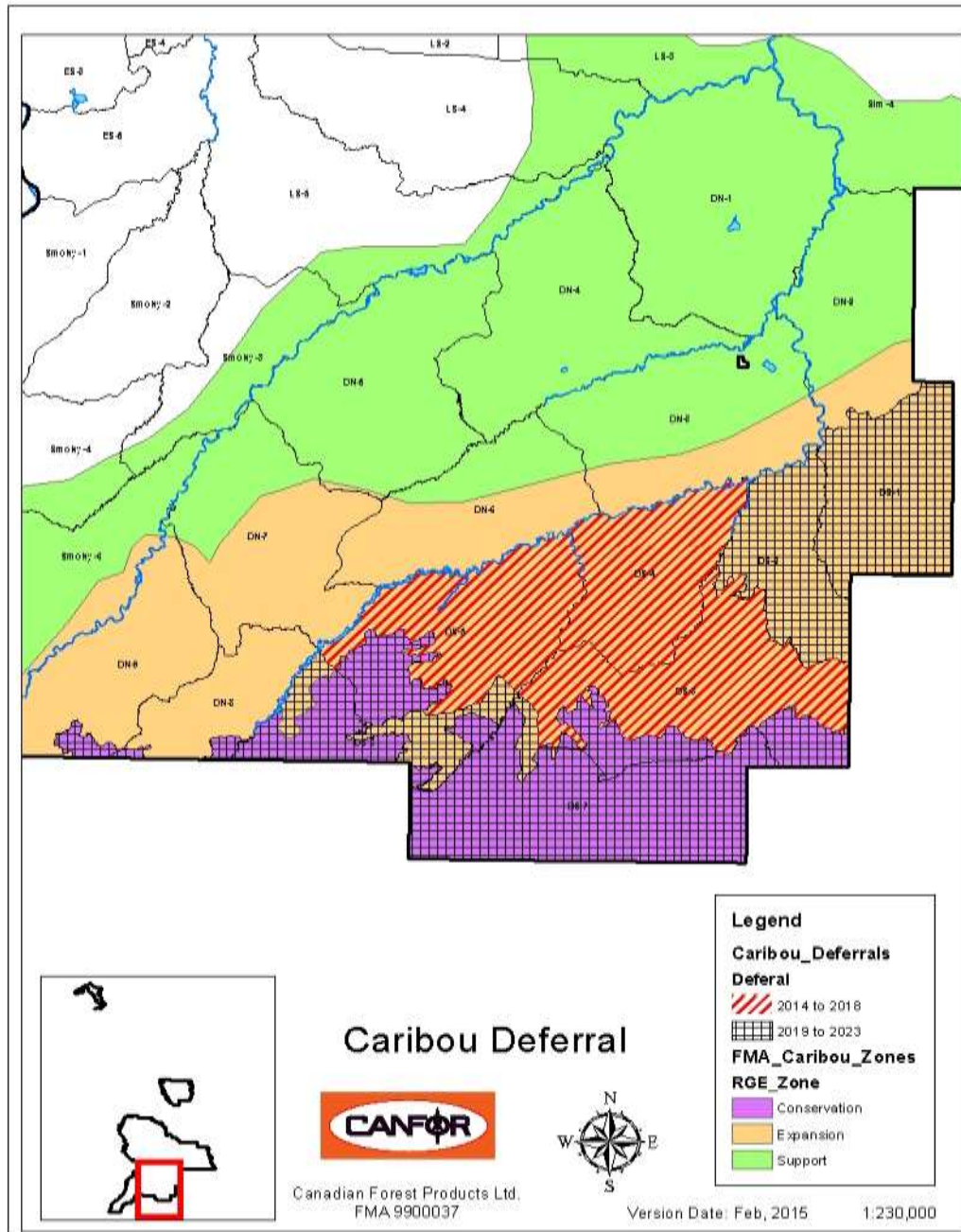


Figure 11 Harvest Deferral Areas

Target (2) Canfor’s 2015 FMP TSA includes all necessary vegetation management assumptions to transition mixedwood stands to conifer as per Table 13. These assumptions will be implemented on blocks harvested within the Caribou Management Area after May 1, 2014. The company’s silviculturist will monitor all harvested blocks and conduct vegetation management activities where required to reduce alternate prey habitat.

**Table 13. Yield Group Transition Table**

Natural Yield Group		Regenerated Stratum		Caribou Management Area	
Code	Description	Base	Genetic	Base	Genetic
1	AW+(S)-AB	D-Hw1-B		D-Hw1-B	
2	AW+(S)-CD	D-Hw2-B		D-Hw2-B	
3	AW/SW/PBSW/BWSW	DC-HwSx-B	DC-HwSx-G	C-Sw-B	C-Sw-G
4	BW/BWAW+(S)	D-Hw4-B		D-Hw4-B	
5	FB+OTH	C-Sw-B	C-Sw-G	C-Sw-B	C-Sw-G
6	H+(S)/S	CD-SwHw-B/DC-HwSx-B	CD-SwHw-G/DC-HwSx-G	C-Sw-B	C-Sw-G
7	PB+(S)	D-Hw7-B		D-Hw7-B	
8	PL/PLFB+(H)	C-PI-B	C-PI-G	C-PI-B	C-PI-G
9	PLAW/AWPL	CD-PIHw-B		C-PI-B	C-PI-G
10	PLSB+OTH	C-PI-B	C-PI-G	C-PI-B	C-PI-G
11	PLSW/SWPL+(H)	C-PI-B	C-PI-G/C-Sw-G	C-PI-B	C-PI-G/C-Sw-G
12	SBLT(G)	C-Sb-B		C-Sb-B	
13	SBLT/LTSB(M/F/U)	removed from landbase			
14	SBPL/SBSW/SBFB	C-Sb-B	C-PI-G/C-Sw-G	C-Sb-B	C-PI-G/C-Sw-G
15	SW/SWFB+(H)-AB	C-Sw-B	C-Sw-G	C-Sw-B	C-Sw-G
16	SW/SWFB+(H)-CD	C-Sw-B	C-Sw-G	C-Sw-B	C-Sw-G
17	SWAW/SWAWPL	CD-SwHw-B	CD-SwHw-G	C-Sw-B	C-Sw-G

Target (3) All Canfor Alberta roads required to access harvest areas south of Deep Valley creek will be constructed to temporary Class III or lower standards for winter use only and will be promptly deactivated each spring. Any Canfor Alberta owned bridges across Deep Valley Creek will be available for winter use only.

**Current Status**

Target (1) Canfor did not harvest any area in the deferral areas between May 1, 2013 to April 30, 2016.

Target (2) Canfor’s 2015 FMP timber supply analysis includes all necessary vegetation management assumptions to transition mixedwood stands to conifer as per Table 13. These assumptions were implemented starting May 1, 2014.

Target (3) Canfor Alberta does not own or operate any open route access south of Deep Valley Creek within the caribou range area.



## Forecast

Through implementing the three targets collectively, high value intact caribou habitat will be maintained into the future.

## Legal Requirements

*Forest Management Agreement, approved Forest Management Plan, Healthy Pine Strategy;*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 1.2.1.1; and*

*Federal Species at Risk Act*

## Monitoring & Measurement

### Annual:

- Target (1) Intersect all harvested areas with the Caribou Management Area and verify no harvesting has occurred where harvesting deferrals have been committed. Report on the amount of area harvested within the Conservation and Expansion zones by Timber Supply Subunit in the APMR.
- Target (2) Compare the amount of mixedwood area harvested versus the amount of area transitioning to coniferous. Report on the area of mixedwood stands harvested within the Caribou Management Area and the amount of area that is planned to be transitioned to pure conifer in the APMR.
- Target (3) All open-route access (i.e. Class I and II roads accessible by 4x4 vehicles in summer) are tracked in the Trimble Resources Roads database. Report on the status of all Canfor roads south of Deep Valley Creek within the caribou range area in the APMR.

## Acceptable Variance

**Target (1) No variance**

Target (2) 90% of mixedwoods will be transitioned to conifer within the Caribou Management Area.

Target (3) No variance

## Response

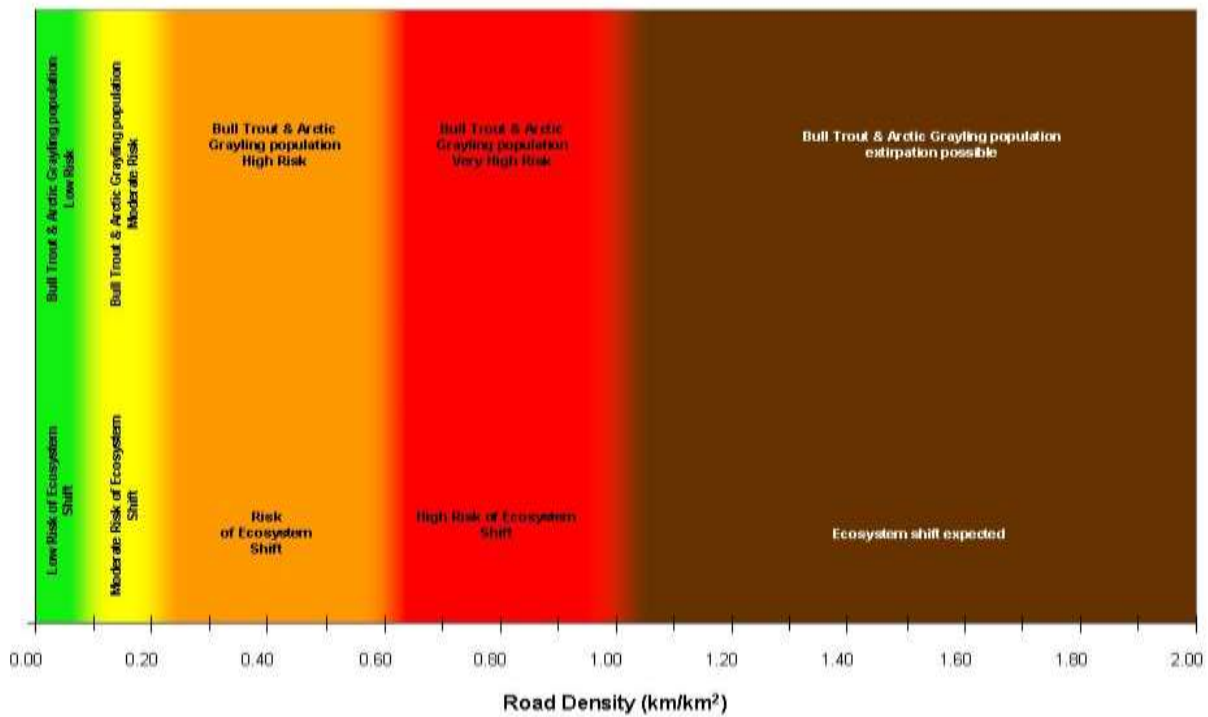
If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **1.2.2b) Bull Trout and Arctic Grayling Fish Risk**

<b>Criterion1:</b> Biological Diversity	<b>Element 1.2 Species Diversity</b>
<b>Value</b>	Through time, all current habitats are represented
<b>Objective</b>	Current species diversity is maintained on the landscape
<b>CSA Core Indicator</b>	1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk
<b>Indicator Statement</b>	<b>Fish risk ranking for Bull Trout and Arctic Grayling (AFMPS VOIT 1.2.1.1)</b>
<b>Description of indicator</b>	Fish risk is determined by calculating road density (km/km <sup>2</sup> ) utilizing the conceptual approach to fish ranking developed by GoA. Road density integrates many key variables that contribute to risk. Road density is useful for describing level of risk to fish populations and communities and is easily quantified.
<b>Target</b>	<b>100% of watersheds with a high or very high fish risk ranking and &gt;25% Canfor influence will be assessed using Canfor’s Fish Risk Flow Chart and have mitigations strategies scheduled and implemented</b>
<b>Description of target</b>	Risk to fish populations and communities is a key consideration for developing and directing strategies to conserve and manage fish resources. Many factors contribute to risk, and the most important factors are alterations to fish habitats and exploitation. Development of forested landscapes requires the development of roads. Roads and road-stream crossings cumulatively increase habitat fragmentation, sedimentation of habitats, and access for exploitation. Road density within watersheds is an excellent metric to describe this cumulative risk to fish and fish habitats.

#### **Basis for the Target**

Bull trout are a *Species of Special Concern* in Alberta (ESCC, 2009). The Alberta Endangered Species Conservation Committee classifies Arctic grayling as Sensitive in the current General Status of Alberta Wild Species report and Species of Special Concern. It has been recommended by GoA to use road density in conjunction with the “Conceptual Approach to Fish Risk” as a method to calculate risk ranking for both species.



**Figure 12: Conceptual Approach to Fish Risk**

### Means of Achieving Objective & Target (Strategies)

Road density is a metric to measure fish risk. Bull trout and Arctic grayling habitat is not only impacted by Canfor Alberta’s roads, but also roads of municipal, government and other industrial users. Canfor Alberta’s current road layer will be updated with new permanent roads and temporary roads used for extraction of timber. All temporary roads that have received a block final clearance or that are known to have been deactivated permanently will be removed. The road density from this calculation will determine the fish risk ranking based on GoA’s "Conceptual Approach to Fish Risk".

Through monitoring fish risk using road densities, forest managers and government will be able to identify the higher risk watersheds and collaboratively work with government to determine types of mitigation strategies that will reduce the risk to bull trout and Arctic grayling fish populations. A list of potential mitigation strategies are provided in the Canfor 2015 Forest Management Plan.

In consultation with GoA, Canfor has developed *Canfor's Fish Risk Flow Chart* (Figure 13). This chart will be used to prioritize watersheds and crossings for the scheduling and implementation of mitigation strategies based on risk to fish.

### Canfor's Fish Risk Flow Chart

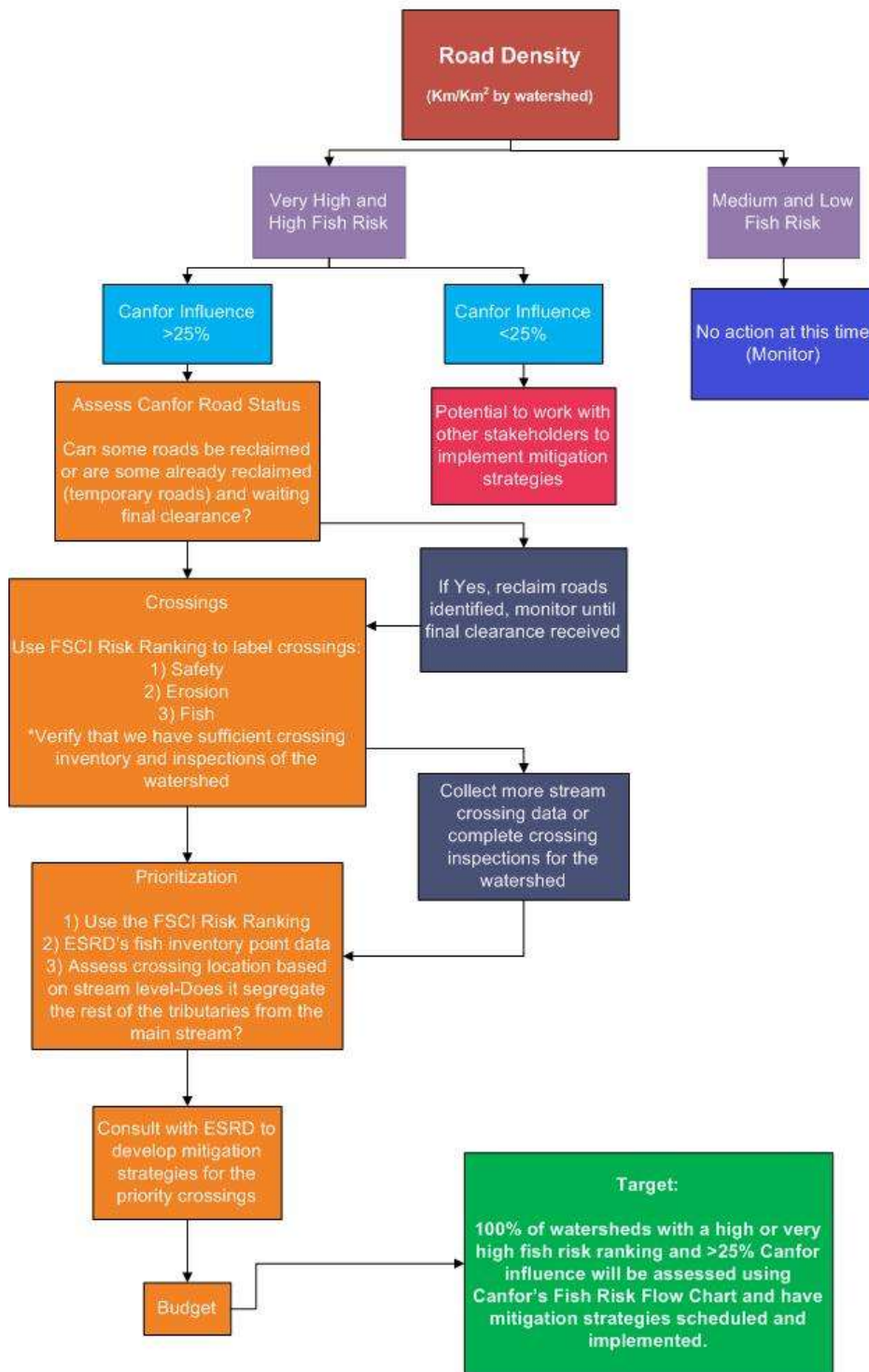
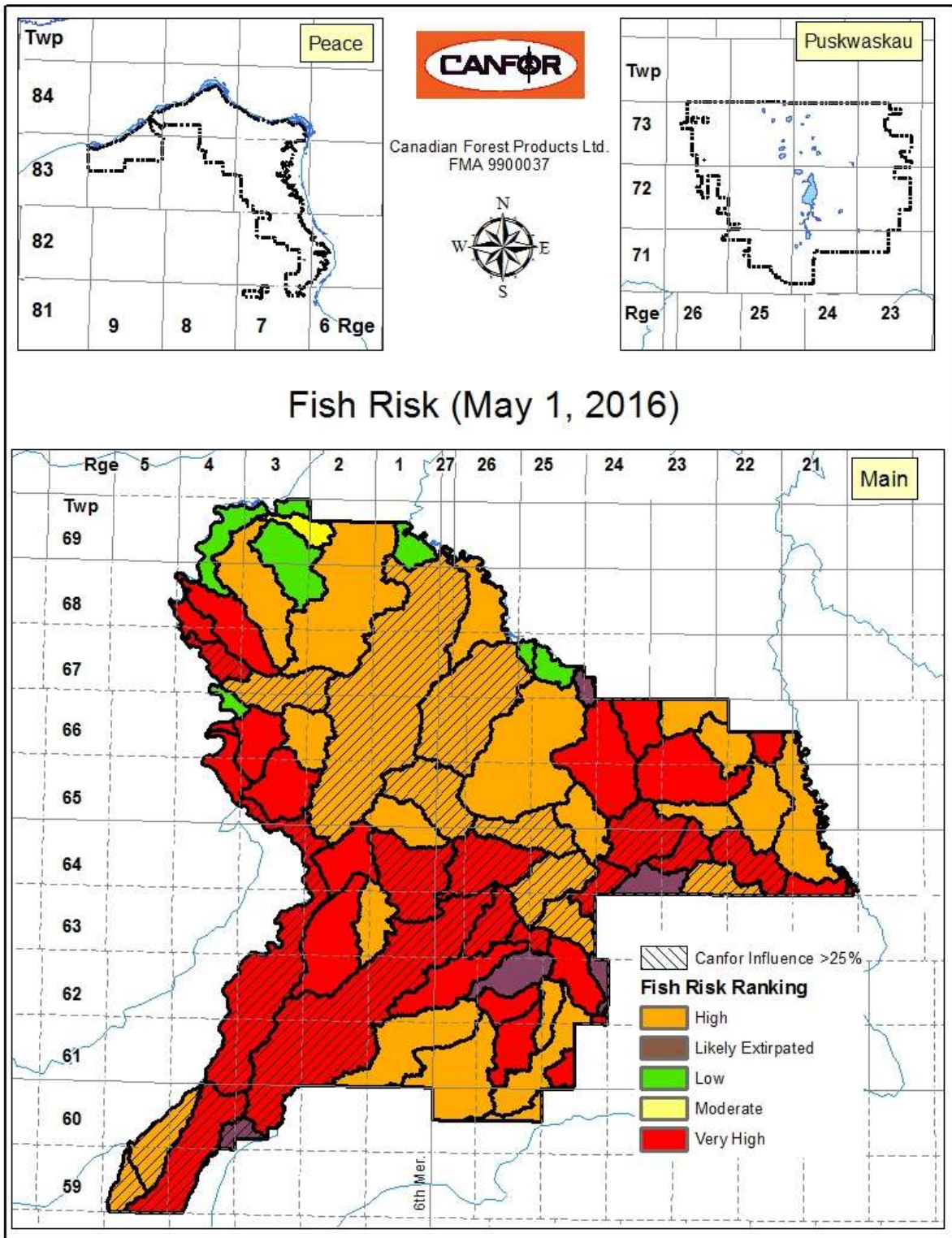


Figure 13: Canfor's Fish Risk Flow Chart

**Current Status**



**Figure 14: Fish Risk Within the DFA**

## **Forecast**

Viable bull trout and Arctic grayling populations will be maintained on the landscape.

## **Legal Requirements**

*Canfor Timber Harvest Planning and Operating Ground Rules;*

*Alberta Forest Management Planning Standard; Federal Species at Risk Act; and*

*Alberta Wildlife Act*

## **Monitoring & Measurement**

### **Annual:**

Report annually the fish risk for bull trout and Arctic grayling by watershed through calculating road density (km/km<sup>2</sup>) of permanent and non-reclaimed temporary forest industry roads within the Main parcel of the DFA. The watersheds will be assessed and prioritized using *Canfor's Fish Risk Flow Chart*. All planned mitigation strategies will be entered into the Foothills Stream Crossing Partnership database and completed activities reported in Canfor's Annual Operating Plan Completed Structure Maintenance Table.

## **Acceptable Variance**

90% of identified very high and high risk watersheds with >25% Canfor influence will have mitigation strategies scheduled and implemented according to plan

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, this will be communicated to GoA and course of action will be determined.



**1.2.2c) Barred Owl**

<b>Criterion 1: Biological Diversity</b>	<b>Element 1.2 Species Diversity</b>
<b>Value</b>	Through time, all current habitats are represented
<b>Objective</b>	Current species diversity is maintained on the landscape
<b>CSA Core Indicator</b>	1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk
<b>Indicator Statement</b>	<b>Amount of barred owl habitat available for breeding pairs (AFMPS VOIT 1.2.1.1)</b>
<b>Description of indicator</b>	Preferred barred owl habitat is old mixedwood forest; a habitat type that could be impacted by forest operations over the long term. The amount of barred owl habitat at any given time in the planning horizon is an indicator of the effectiveness of the Forest Management Plan in maintaining that habitat type.
<b>Target</b>	<b>The amount of potential barred owl habitat for breeding pairs will not be more than 10% below current levels across the Defined Forest Area</b>
<b>Description of target</b>	The Alberta Vegetation Inventory based barred owl habitat model was developed to estimate the spatial extent of potential barred owl breeding territories on the landscape (Russell, 2008). This model will be included in the Spatial Harvest Sequence runs and will be consistent with the planning standard (0, 10, 20, 50, 100 and 200 years.).

**Basis for the Target**

Barred owls require old mixedwood forest throughout their range in Alberta. They are large owls that nest in cavities, typically very old hardwood trees or standing snags. The requirement for old mixedwood habitat and the large size of their home range make them a suitable indicator for other old mixedwood associates. By maintaining enough suitable habitat for a barred owl pair to exist it is likely that many other species that require this habitat on a smaller scale will also benefit.

The coarse filter approach to ecosystem management works on the assumption that if suitable habitat is available, the



species associated with that habitat will be able to thrive. The management choices will ensure that habitat types available prior to operations will remain available through time.

**Means of Achieving Objective & Target (Strategies)**

The barred owl model developed by GoA will be run concurrently with timber supply scenarios. The outputs of the model will be used to support future management decisions that may influence potential barred owl habitat. Operating plans will be consistent with the spatial harvest sequence of the PFMS.

**Current Status**

Table 14 and Figure 15 below indicate the baseline and current amount of suitable barred owl habitat on Canfor’s DFA.

**Table 14. Area of Suitable Barred Owl Habitat**

Year	Suitable Barred Owl Habitat (ha)	% Change in Suitable Barred Owl Habitat
Baseline	631,901	-
2014 TY	626,846	0.8
2015 TY	596,884	5.5
Current (2016 TY)	601,008	4.9



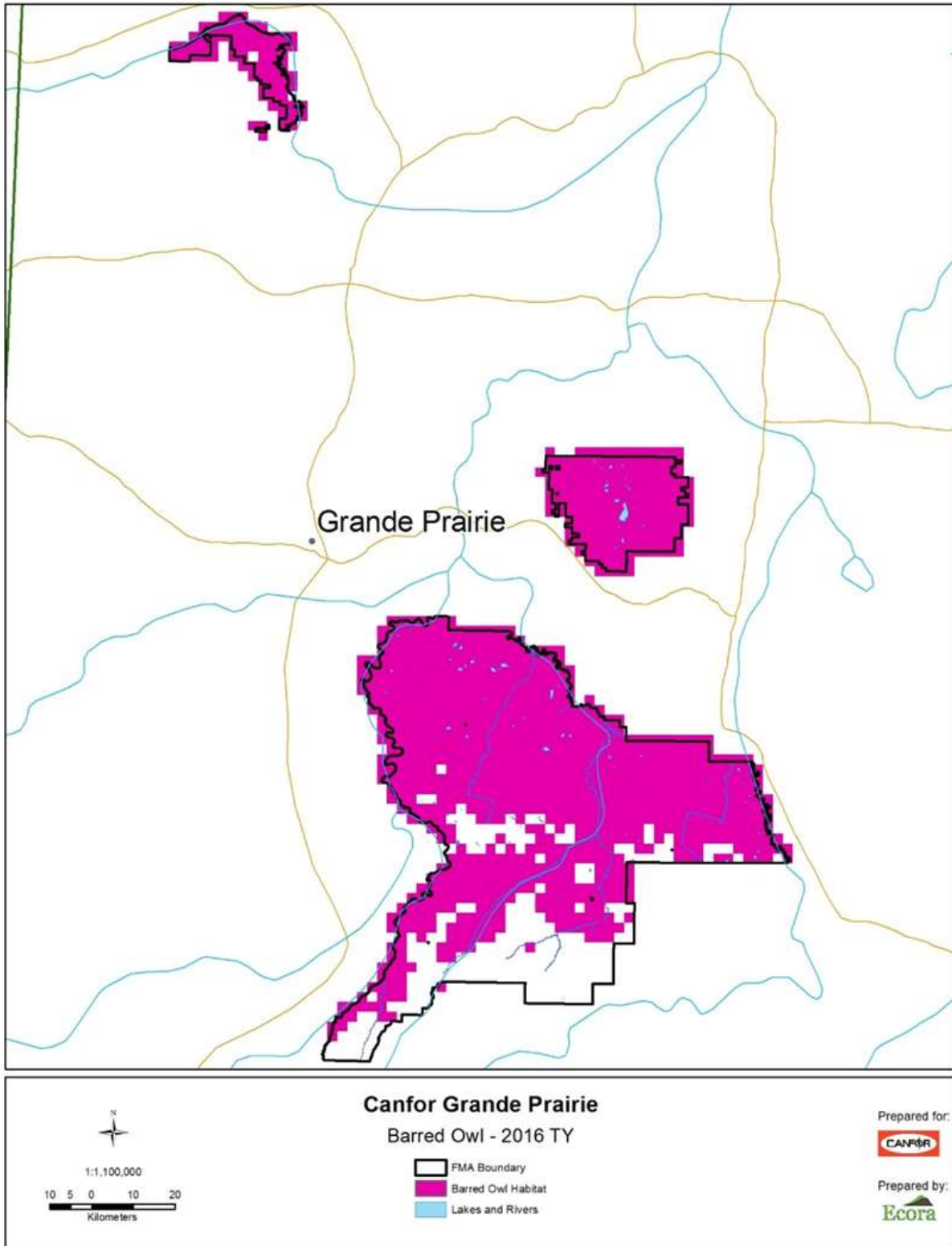


Figure 15: Current Barred Owl Potential Breeding Habitat Within the DFA

## **Forecast**

By following the “Means of Achieving Objective and Target (Strategies)” sections of this indicator, it is anticipated that barred owl habitat will be maintained.

## **Legal Requirements**

*Alberta Forest Management Planning Standard; Federal Species at Risk Act; and Alberta Wildlife Act*

## **Monitoring & Measurement**

### **Periodic:**

The TSA model forecasts the area of barred owl habitat from the PFMS. Checks will be completed annually to verify trend towards meeting the predicted levels and reported in the APMR.

## **Acceptable Variance**

The amount of potential barred owl habitat will not be more than 15% below current levels across the DFA

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, this will be communicated to GoA and course of action will be determined.

### 1.2.2d) Road Density

<b>Criterion 1: Biological Diversity</b>	<b>Element 1.2 Species Diversity</b>
<b>Value</b>	Through time, all current habitats are represented
<b>Objective</b>	Current species diversity is maintained on the landscape by minimizing access
<b>CSA Core Indicator</b>	1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk
<b>Indicator Statement</b>	<b>Density (linear km/km<sup>2</sup>) of open roads in the Grizzly Bear Range (AFMPS VOIT 1.1.1.3a)</b>
<b>Description of indicator</b>	One way to gauge the wilderness quality of an area is to measure the amount of roads per unit area. Road density is an indication of the influence of human activity on an area and the state of its wildlife populations and natural processes.
<b>Target</b>	<b>Density of open roads (linear km/km<sup>2</sup>) not to exceed 0.75 km/km<sup>2</sup> for the Grizzly Bear Range</b>
<b>Description of target</b>	Density of open roads is a measure of industrial footprint.

#### **Basis for the Target**

The basis for the target is to minimize the footprint as it relates to roads and to align with an already identified target within the *Draft Alberta Grizzly Bear Recovery Plan* (AEP, 2016). Grizzly bear mortality is correlated with road density; more roads usually equate to more human use. It has been suggested that high road densities could create mortality sinks for grizzly bears and in the northern east slopes, grizzly bear survival rates decreased with increasing road densities (Stenhouse, 2005). In some jurisdictions, distance from roads is used to evaluate habitat suitability for grizzly bears (Gibeau, 2000).

The Draft Alberta Grizzly Bear Recovery Plan defines open roads as “access that is reasonably drivable with on-highway vehicles (i.e. paved or graveled)” (AEP, 2016).

#### **Means of Achieving Objective & Target (Strategies)**

Access management and integrated land management with government and energy sector, including road deactivation and access restriction, can mitigate some of the negative impacts of roads. The road density from this calculation will be used to assess the target.

**Current Status**

**Table 15. Road Density (Km/Km<sup>2</sup>)**

Area	Area (Km <sup>2</sup> )	2016 (Road (Km)	2016 Density (Km / Km <sup>2</sup> )
Grizzly Bear Range	1899	1113	0.58

**Forecast**

Reporting and controlling the road density will maintain biodiversity within the reporting areas.

**Legal Requirements**

*Canfor Timber Harvest Planning and Operating Ground Rules;*

*Alberta Forest Management Planning Standard;*

*Federal Species at Risk Act; and*

*Alberta Wildlife Act*

**Monitoring & Measurement**

Update the road data layer for the Grizzly Bear Range for all open roads. Calculate road density for the Grizzly Bear Range and report in the APMR.

**Acceptable Variance**

Road density will not exceed 0.83 km/km<sup>2</sup> in the Grizzly Bear Range

**Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, this will be communicated to GoA and course of action will be determined.

### 1.2.3 Native Seedlings Used In Reforestation

<b>Criterion 1: Biological Diversity</b>	<b>Element 1.2 Species Diversity</b>
<b>Value</b>	Through time all current habitats are represented
<b>Objective</b>	Current species diversity is maintained on the landscape
<b>CSA Core Indicator</b>	1.2.3 Proportion of regeneration comprised of native species (Repeated as 2.1.2)
<b>Indicator Statement</b>	<b>Regeneration will be consistent with provincial regulations and standards for seed and vegetative use (AFMPS VOIT 1.3.1.1)</b>
<b>Description of indicator</b>	Provincial regulations require the use of native seed for all reforestation on crown lands. Non-native species are not permissible for deployment.
<b>Target</b>	<b>100% compliance with the Alberta Forest Genetics Resources Management and Conservation Standards</b>
<b>Description of target</b>	Provincial regulations require the use of native seed for all reforestation on crown lands. Following the regulations will ensure this target is met.

Refer to target 1.3 *Genetic Diversity of the Seedlings Used In Reforestation* for the detailed write up.

The Alberta Forest Genetic Resources Management and Conservation Standards set the standard for the use of seed and vegetative material that can be used in reforestation programs. The regulation applies to both forest collected (native species) and orchard seed.

### 1.3 Genetic Diversity of the Seedlings Used In Reforestation

<b>Criterion 1: Biological Diversity</b>	<b>Element 1.3 Genetic Diversity</b>
<b>Value</b>	Natural genetic diversity
<b>Objective</b>	Genetic diversity will be maintained on the landscape
<b>CSA Core Indicator</b>	No core indicator in Z809-16
<b>Indicator Statement</b>	<b>Regeneration will be consistent with Provincial regulations and standards for seed and vegetative use (AFMPS VOIT 1.3.1.2)</b>
<b>Description of indicator</b>	The Alberta Forest Genetic Resources Management and Conservation Standards outline the rules for the use of seed and vegetative material that can be used in reforestation programs. The purpose of Forest Genetics Resources Management System is to ensure proper management of forest genetic material.
<b>Target</b>	<b>100% compliance with the Alberta Forest Genetic Resources Management and Conservation Standards for all seed collection and seedling deployment</b>
<b>Description of target</b>	The company must report the source of seedling and vegetative resources used in reforestation. The regulation applies to both forest collected and orchard seed. This data is audited to ensure compliance with the policy. Data checks are in place to ensure compliance prior to completing reforestation work. Non-conformances are reported to, and are audited by the Province.

#### **Basis for the Target**

Following the Forest Genetics Resources Management System (FGRMS) will ensure that seedlings and vegetative material collected and used in reforestation programs meet the genetic requirements of the Province. FGRMS ensures that there is genetic diversity in those seedlots. FGRMS applies to both forest collected and orchard seed.

#### **Means of Achieving Objective & Target (Strategies)**

Silviculture staff are required to follow FGRMS.

## **Current Status**

In the past, Canfor Alberta has had some minor incidents with adherence to FGRMS and its predecessor, Standards for Tree Improvement in Alberta that were reported in past APMRs. Staff training and modifications to the reforestation planning tools have reduced the probability of re-occurrence.

## **Forecast**

Through proper implementation of the FGRMS, it is anticipated that genetic diversity on the DFA will be maintained.

## **Legal Requirements**

*Timber Management Regulations;*

*Alberta Forest Genetic Resources Management and Conservation Standards; and*

*Alberta Forest Management Planning Standard, Annex 4-Performance Standards*

## **Monitoring & Measurement**

### **Annual:**

Data entry into the Alberta Reforestation Information System (ARIS) allows the Province to audit the company's results. Use of the company's database, (*Trimble Resources* or its successor) provides the tools internally to make reforestation plans that meet the regulations. Information provided to the contractor will identify correct deployment of seedlings. All contraventions will be recorded in Canfor's ITS and reported in the APMR.

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **1.4.1a) Consultation on Provincially Protected Areas**

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.4 Protected Areas and Sites of Special Biological, Geological, Heritage, or Cultural Significance</b>
<b>Value</b>	Identified protected areas and sites that have special Biological, Geological, Heritage, and Cultural significance
<b>Objective</b>	Conservation of the natural states and processes to maintain protected areas and sites that have Biological, Geological, Heritage, and Cultural significance
<b>CSA Core Indicator</b>	1.4.1 Protection of sites of special significance
<b>Indicator Statement</b>	<b>Percent of forest management activities where consultation has occurred for operations near Provincially protected areas (AFMPS VOIT 1.4.1.1)</b>
<b>Description of indicator</b>	The Province will be consulted when the company is operating within one kilometer of any Provincially protected areas.
<b>Target</b>	<b>The Province will be consulted 100% of the time when operations will occur within one kilometer of Provincially protected areas</b>
<b>Description of target</b>	Canfor has committed to notify the Province of operations planned to occur near neighbouring protected areas to ensure that the surrounding ecological values of the protected area are maintained.

#### **Basis for the Target**

Provincially protected areas contribute to ecological values in near proximity to the DFA area (i.e. protection of important wildlife habitat, watercourse protection, seral stages, and grasslands). Provincially protected areas in Alberta include Ecological Reserves, Wilderness Areas, Wildland Provincial Parks, Provincial Parks, Natural Areas, Heritage Rangelands, and Provincial Recreation Areas.

#### **Means of Achieving Objective & Target (Strategies)**

When harvesting operations are planned to occur near legally protected areas such as the Dunvegan West Wildland Park, Silver Valley Ecological Reserve, Young’s Point Provincial Park, Williamson Provincial Park and Sturgeon Lake Natural Area, the government department responsible for that area will be consulted.



## **Current Status**

In the past, Canfor has harvested blocks in the Peace parcel of the DFA, which is located directly adjacent to the Dunvegan West Wildland Provincial Park. Multiple harvested blocks were located within 1 kilometer of the park boundary and Canfor initiated consultation with the province prior to the harvesting of these blocks. The Province did not have any objections to the harvesting of the blocks within 1 kilometer of the Provincial Park and requested that due to the high incidence of MPB in the area that Canfor harvest the pine up to the edge of the banks of the Peace River. After harvesting activities were completed, Canfor installed Provincial Park Boundary signs at the request of Alberta Tourism, Parks and Recreation at the boundaries of the blocks and the Provincial Park.

## **Forecast**

By following the “Means of Achieving Objective and Target (Strategies)” sections of this indicator, it is anticipated that the ecological values of the protected areas will be maintained. Consultation with protected area agencies will occur.

## **Legal Requirements**

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards*

## **Monitoring & Measurement**

### **Annual:**

Evidence that consultation has occurred within operations within 1 kilometer of protected park boundaries will be recorded in Canfor's Creating Opportunities for Public Involvement (COPI) database. Conformance to the target will be reported in the APMR

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **1.4.1b) Protection of Sites with Geological, Heritage, or Cultural Significance**

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.4 Protected Areas and Sites of Special Biological, Geological, Heritage, or Cultural Significance</b>
<b>Value</b>	Identified protected areas and sites that have special Biological, Geological, Heritage, and Cultural significance
<b>Objective</b>	Conservation of the natural states and processes to maintain protected areas and sites that have Biological, Geological, Heritage, and Cultural significance
<b>CSA Core Indicator</b>	1.4.1 Protection of sites of special significance
<b>Indicator Statement</b>	<b>Percent of planned blocks assessed for Geological, Heritage, and Cultural potential (AFMPS VOIT 1.4.1.1)</b>
<b>Description of indicator</b>	In order to maintain sites that have Geological, Heritage, and Cultural significance, these must be identified through archaeological processes or existing knowledge and evaluated to determine potential for occurrence
<b>Target</b>	<b>100% of all planned blocks will have Historical Resource Impact Assessments completed to determine Geological, Heritage, and Cultural resource potential</b>
<b>Description of target</b>	All planned blocks will have Historical Resource Impact Assessments completed to identify potential sites of Geological, Heritage, and Cultural significance.

#### **Basis for the Target**

The Alberta *Historical Resources (HR) Act* provides the regulatory framework for the protection and management of historical, archaeological, geological and cultural resources (“historical sites”) on public and private lands in the province (GoA, 2000). The *HR Act* requires that developers (including forestry companies) ensure they do not disturb known and unknown historical sites during the course of their development activities. This is accomplished by identifying the presence of historical sites on the ground and demarcating them for avoidance, usually as a Historical Resources Impact Assessment (HRIA).

HRIAs are conducted prior to a development taking place in order to locate or relocate known and unknown historical sites and determine their vertical and horizontal extents and interpretive significance. This helps the regulator make management decisions regarding the resource. If an

historical site cannot be avoided by the proposed development, the regulator may direct the developer to undertake various mitigative measures, including more detailed assessment, excavation, and partial or full data recovery. This ensures that information about the affected historical site is collected prior to its disturbance or destruction.

### **Means of Achieving Objective & Target (Strategies)**

Canfor Alberta contracts certified archaeologists to conduct historical resource impact assessments on all blocks and roads prior to commencement of forestry activities. The prescriptions from the assessments can range from performing extensive field surveys, to approving the block ready for harvest.

### **Current Status**

All blocks harvested in the 2016 timber year had historical resource impact assessments completed prior to commencement of forestry activities.

### **Forecast**

By following the “Means of Achieving Objective and Target (Strategies)” sections of this indicator, it is anticipated that the geological, heritage, and culturally significant sites will be maintained across the DFA.

### **Legal Requirements**

*Alberta Historical Resources Act; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards*

### **Monitoring & Measurement**

#### **Annual:**

Historical resource impact assessments are tracked for all blocks in Canfor’s *Trimble Resources* database. Status reports will be created from this database as a method of monitoring. Any non-compliance to the target will be entered into Canfor’s Incident Tracking System (ITS) and reported in the APMR.

### **Acceptable Variance**

No variance

### **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified

### 1.4.2a) Consultation on Areas of Special Biological Significance

<b>Criterion 1:</b> Biological Diversity	<b>Element 1.4 Protected Areas and Sites of Special Biological, Geological, Heritage, or Cultural Significance</b>
<b>Value</b>	Identified protected areas and sites that have special biological significance
<b>Objective</b>	Conservation of the natural states and processes to maintain protected areas and sites that have special Biological, Geological, Heritage, and Cultural significance
<b>CSA Core Indicator</b>	1.4.1 Proportion of identified sites with implemented management strategies
<b>Indicator Statement</b>	<b>Percent of forest management activities consistent with management strategies for sites of biological significance (AFMPS VOIT 1.1.1.2.2)</b>
<b>Description of indicator</b>	The targets for parks are in 1.4.1(a) and unique biological sites are found in 1.1.1 above. This target includes sites of biological significance such as dens, vernal pools, nests, etc.
<b>Target</b>	<b>100% of identified biologically significant sites will have implemented management strategies identified in consultation with the Province</b>
<b>Description of target</b>	Forest Harvest Plan and General Development Plan documents and maps will show wildlife referral map overlaps and discuss how the biologically significant sites have been integrated into the plan.

#### **Basis for the Target**

Areas of special biological significance contribute to ecological values within the DFA. These sites must be managed to ensure these values are maintained.

#### **Means of Achieving Objective & Target (Strategies)**

Canfor operations are directed by the Operating Ground Rules (OGRs) and Forest Management Plan (FMP). Each of these includes considerations for sites of biological significance. All operating plans are reviewed, approved, and monitored by the Province to ensure that the intent of the OGRs and the FMP are being implemented on the ground.

## **Current Status**

Current OGRs and operations consider these sites when plans are developed. Review, approvals, and monitoring from the Province ensure that Canfor operates around these sites appropriately.

## **Forecast**

Through proper implementation of the FMP, SFMP, and OGRs, sites of biological significance will be protected and ecological values maintained on the DFA.

## **Legal Requirements**

*Canfor Timber Harvest Planning and Operating Ground Rules; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards*

## **Monitoring & Measurement**

### **Annual:**

Annual Operating Plans and approval documents will be reviewed annually to determine the number of additional sites of biological significance identified and protected. All new identified sites will be summarized in the APMR.

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

**1.4.2b) Management Strategies for Sites of Geological, Heritage, or Cultural Significance**

<b>Criterion 1: Biological Diversity</b>	<b>Element 1.4 Protected Areas and Sites of Special Biological, Geological, Heritage, or Cultural Significance</b>
<b>Value</b>	Identified protected areas and sites that have special biological significance
<b>Objective</b>	Conservation of the natural states and processes to maintain protected areas and sites that have special Biological, Geological, Heritage, and Cultural significance
<b>CSA Core Indicator</b>	1.4.1 Proportion of identified sites with implemented management strategies
<b>Indicator Statement</b>	<b>Percent of identified Geological, Heritage, and Cultural sites with implemented management strategies (AFMPS VOIT 1.1.1.2.2)</b>
<b>Description of indicator</b>	In order to maintain identified sites that have Geological, Heritage, and Cultural significance, appropriate management strategies must be implemented
<b>Target</b>	<b>100% of identified Geological, Heritage, and Cultural sites will be protected through implemented management strategies</b>
<b>Description of target</b>	All identified Geological, Heritage, and Cultural sites will have implemented management strategies

**Basis for the Target**

As required under the *Alberta Historical Resources Act* (GoA, 2000), all identified Geological, Heritage, or Cultural sites will be protected through management strategies.

**Means of Achieving Objective & Target (Strategies)**

Canfor Alberta contracts certified archaeologists to conduct historical resource impact assessments on all harvest units and roads prior to the commencement of harvest activities. If a site is identified in field survey, the archaeologists prescribe measures to protect the resource in accordance with the *Alberta Historical Resources Act*, which are then included in operational plans.

## **Current Status**

In the 2015 timber year, 116 blocks were harvested (3321ha), of which all identified Geological, Heritage, and Cultural sites were protected through implemented management strategies.

## **Forecast**

Through proper implementation of the FMP, SFMP, and OGRs, sites of Geological, Heritage, and Cultural significance will be protected and maintained on the DFA.

## **Legal Requirements**

*Canfor Timber Harvest Planning and Operating Ground Rules;*

*Alberta Historical Resources Act; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards*

## **Monitoring & Measurement**

### **Annual:**

All blocks harvested in the previous year will be reviewed with updated digital imagery to confirm that all identified Geological, Heritage and Cultural sites were protected through implemented management strategies. Any non-compliance to the target will be entered into Canfor's Incident Tracking System (ITS) and reported in the APMR.

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **2.1.1a) Prompt Reforestation to Maintain Forest Condition and Productivity**

<b>Criterion 2:</b> Ecosystem Condition and Productivity	<b>Element 2.1:</b> Forest Ecosystem Condition and Productivity
<b>Value</b>	Healthy forest ecosystem
<b>Objective</b>	Meet reforestation targets on all harvested areas
<b>CSA Core Indicator</b>	2.1.1 Reforestation Success (same as 4.1.2)
<b>Indicator Statement</b>	<b>Prompt reforestation (AFMPS VOIT 2.1.1.1)</b>
<b>Description of indicator</b>	Prompt reforestation helps to keep the forest healthy and resilient.
<b>Target</b>	<b>100% of all harvested blocks will be reforested within 2 years</b>
<b>Description of target</b>	Prompt reforestation of blocks as required in the Operating Ground Rules.

#### **Basis for the Target**

Early establishment of a viable crop of trees reduces the need for subsequent interventions (re-planting, brushing) and positively contributes to forest growth and carbon sequestration.

#### **Means of Achieving Objective & Target (Strategies)**

All harvested blocks will have reforestation strategies/activities completed within 2 years after harvest.

#### **Current Status**

All blocks harvested in the 2014 timber year have received initial treatment within 2 years of harvest.

#### **Forecast**

By following the “Means of Achieving Objective and Target (Strategies)” sections of this indicator, the productive capacity of the forested landbase will be maintained.

#### **Legal Requirements**

*Timber Management Regulation; and*

*Canfor Timber Harvest Planning and Operating Ground Rules*



## **Monitoring & Measurement**

### **Annual:**

A database query of the reforestation activities completed by April 30<sup>th</sup> of the following year will be compared to the harvesting report. Any blocks that do not meet the 2-year reforestation requirement will be reported as a non-compliance in Canfor's Incident Tracking System (ITS). The APMR will summarize any non-compliances that are entered into ITS regarding blocks not being harvested within 2 years of harvest.

## **Acceptable Variance**

No variance

## **Response**

If the targets are not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **2.1.1b) Success of Reforestation Program to Promote Condition and Productivity**

<b>Criterion 2:</b> Ecosystem Condition and Productivity	<b>Element 2.1:</b> Forest Ecosystem Condition and Productivity
<b>Value</b>	Healthy forest ecosystem
<b>Objective</b>	Meet reforestation targets on all harvested areas
<b>CSA Core Indicator</b>	2.1.1 Reforestation success (Same as 4.1.2)
<b>Indicator Statement</b>	<b>Prompt retreatment of failed areas (AFMPS VOIT 2.1.1.1)</b>
<b>Description of indicator</b>	Prompt retreatment of areas not successfully reforested on the initial treatment, as defined in the Reforestation Standard of Alberta (RSA).
<b>Target</b>	<b>All harvested blocks that have not achieved the regeneration targets as per the Reforestation Standard of Alberta establishment survey standards will have remedial treatments completed within 12 months of the survey date</b>
<b>Description of target</b>	All blocks require an establishment survey completed by year 8 after harvest. Reforestation retreatments are required to be completed within 12 months of the establishment survey.

#### **Basis for the Target**

Reforestation success is measured with regeneration surveys. This target will promote the prompt retreatment of blocks that have not achieved initial success due to uncontrollable or unforeseen factors.

#### **Means of Achieving Objective & Target (Strategies)**

When establishment surveys are completed, a list of blocks requiring remedial treatment is generated. Remedial treatments will be planned and completed within 12 months of the survey dates.

#### **Current Status**

Establishment surveys are conducted every second May. Harvested blocks that are 5-7 years old are pooled and surveyed in 1 year. Canfor completed establishment surveys on the DFA in 2015. Of the 4140 ha surveyed, 178.5 ha (4%) did not meet the regeneration standards, however were successfully retreated within the 12 months.

## Forecast

By following the “Means of Achieving Objective and Target (Strategies)” sections of this indicator, it is anticipated that the productive capacity of the forested landbase will be maintained.

## Legal Requirements

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 2.1.1.1;*

*Timber Management Regulations; and*

*Reforestation Standard of Alberta*

## Monitoring & Measurement

### Annual:

Query all blocks surveyed in the calendar year preceding the last full calendar year. The total number of blocks and those blocks that achieved the required thresholds will be listed. Blocks that did not achieve the standard will also be listed, along with the number of blocks that have had remediation treatments applied following the survey. Any blocks that did not receive remedial treatment within 12 months of the regeneration survey date will be entered into Canfor’s Incident Tracking System (ITS) as a non-compliance and summarized in the APMR.

## Acceptable Variance

A 6-month variance to the twelve-month retreatment period will apply for up to 50% of the blocks requiring remediation treatments.

The 6 months allows for surveys completed in the spring of 1 year to have treatments done in the following summer when seedlings may not be available the first summer.

## Response

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

**2.1.1c) Growth Rate of Regenerating Forests to Promote Forest Condition and Productivity**

<b>Criterion 2:</b> Ecosystem Condition and Productivity	<b>Element 2.1:</b> Forest Ecosystem Condition and Productivity
<b>Value</b>	Healthy forest ecosystem
<b>Objective</b>	Meet reforestation targets on all harvested areas
<b>CSA Core Indicator</b>	2.1.1 Reforestation success (Same as 4.1.2)
<b>Indicator Statement</b>	<b>Actual regenerated stand yield compared to the yield expectations of the Timber Supply Analysis (AFMPS VOIT 2.1.1.1 and 5.2.3.1)</b>
<b>Description of indicator</b>	The Reforestation Standard of Alberta is a process for comparing actual results of regenerating stands to the growth expectations in the Timber Supply Analysis.
<b>Target</b>	<b>The regenerated stand yield (Mean Annual Increment) for the total of all sampling populations will meet or exceed the regenerated stand yield assumptions of the Timber Supply Analysis in the Reforestation Standard of Alberta performance survey process</b>
<b>Description of target</b>	The Province requires that regenerated stand yield achieved by reforestation programs is measured and compared to the projections used in developing the Timber Supply Analysis. Targeting yields that meet or exceed the expectations will ensure sustainable harvest levels and a healthy forest ecosystem.

**Basis for the Target**

Healthy forests can be achieved when harvest levels do not exceed growth levels. The Reforestation Standard of Alberta (RSA) provides the tools to measure and report the growth predictions of reforested stands in comparison to the yield expectations of the Timber Supply Analysis (TSA).

## Means of Achieving Objective & Target (Strategies)

Prompt and effective reforestation programs will create regenerating stands. Upon completion of initial reforestation treatments, there are additional programs to monitor regeneration success prior to conducting a RSA performance survey. The RSA process provides the tools to measure and compare yields.



## Current Status

Performance surveys are conducted every second year on the DFA. Harvested blocks that are 13 and 14 years old are pooled and surveyed in 1 year. The results of the surveys are summarized by yield strata, which correspond to the landbase designation code assigned by GoA. Each stratum has a mean annual increment (MAI) target assigned from the growth and yield curves used in the TSA for the FMP.

Canfor completed performance surveys on the DFA in the 2015 timber year and has scheduled the next set of surveys for the 2017 timber year. Table 16 depicts the survey results compared to the MAI target associated with those blocks.

**Table 16. Performance Survey Results**

Strata	MAI Target (m <sup>3</sup> /ha/yr)		MAI Survey Results (m <sup>3</sup> /ha/yr)	
	Conifer	Deciduous	Conifer	Deciduous
D-Hw-B	0.15	2.75	1.24	3.08
DC-HwSx-B	1.71	1.80	2.40	1.95
CD-PIHw-B	1.54	0.89	2.63	1.15
CD-SwHw-B	1.80	0.91	1.98	1.72
C-PI-B	2.72	0.17	3.57	0.56
C-Sb-B	1.47	0.02	2.73	0.55
C-Sw-B	2.32	0.43	2.97	0.64

## Forecast

By following the “Means of Achieving Objective and Target (Strategies)” section of this indicator, it is anticipated that the regenerated stand yields will meet or exceed the yield assumptions of the TSA and ensure sustainable forest harvest levels and healthy forest ecosystems are maintained into the future.

## Legal Requirements

*Timber Management Regulation;*

*Reforestation Standard of Alberta; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 5.2.3.1*

## Monitoring & Measurement

**Periodic:**

The RSA results are accumulated and incorporated into future FMP Timber Supply Analysis (TSA).

**Annual:**

All RSA program results will be reviewed and compared to FMP MAI targets for the quadrant. Some years may not have results, as the surveys may be completed every second year.

Results will be reported in the APMR and the GoA Alberta Reforestation Information System (ARIS) annually.

**Acceptable Variance**

The 5-year average must meet the mean annual increment targets for the current quadrant period.

**Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 2.1.2 Noxious Weeds

<b>Criterion 2:</b> Ecosystem Condition and Productivity	<b>Element 2.1:</b> Forest Ecosystem Condition and Productivity
<b>Value</b>	Healthy forest ecosystem
<b>Objective</b>	Forest ecosystem health will be maintained
<b>CSA Core Indicator</b>	2.1.2 Proportion of regeneration comprised of native species (Same as 1.2.3)
<b>Indicator Statement</b>	<b>Noxious weed program implementation (AFMPS VOIT 2.1.3.1)</b>
<b>Description of indicator</b>	Noxious weeds are plants which have the potential for rapid spread and major crop losses. Weeds in this category are to be controlled to prevent spreading.
<b>Target</b>	<b>100% of noxious weeds identified along Canfor Alberta's dispositions will have treatments scheduled and completed according to the plan</b>
<b>Description of target</b>	The purpose of this target is to monitor the success of Canfor's noxious weed treatment program.

#### **Basis for the Target**

The treatment of noxious weeds is legislated for dispositions (roads, camps, and other processing sites) issued under the *Public Lands Act*-section 63 (GoA, 2014 b.). It states that all noxious weeds must be treated as described in the *Weed Control Act* (GoA, 2011). The *Public Lands Act* does not however, clearly specify treatment requirements specific to timber dispositions which are issued under the *Forests Act* (GoA, 2014 a.). GoA's *Directive No. 2001-06 Weed Management in Forestry Operations* (AESRD, 2001) was developed to provide direction under the *Weed Control Act* for dispositions issued under the *Forests Act*.

The *Weed Control Act* ensures that the appropriate action and control practices are implemented for threatening weed infestations.

The following excerpt is from the *Weed Control Act*.

- *A person shall control a noxious weed that is on land the person owns or occupies.*
- *A person shall destroy a prohibited noxious weed that is on land the person owns or occupies.*

#### **Means of Achieving Objective & Target (Strategies)**

All Canfor Alberta FMG staff are required to complete noxious weed training in which reporting procedures are outlined. Throughout the year, Canfor FMG Alberta staff and the Municipal

weed inspectors collect locations and species of weeds identified on the DFA. Canfor also completes inspections on all Canfor owned dispositions annually to identify any noxious weeds. All identified noxious weeds are reported to the Canfor Roads Supervisor who then schedules them for treatment.

### **Current Status**

100% of the identified noxious weeds were treated in Canfor's DFA as scheduled in 2016. In total 25.2 ha were treated in 2016 on Canfor dispositions including roads, gravel pits, and yard sites. Some of the species treated include Canada thistle, Common Tansy, Oxeye Daisy, Scentless Chamomile, Sow Thistle, and Buttercup.

### **Forecast**

By following Means of Achieving Objective and Target (Strategies)" section of this indicator, it is anticipated that native species diversity will be preserved.

### **Legal Requirements**

*Weed Control Act part 1;*

*AESRD Directive 2001-6; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 2.1.3.1*

### **Monitoring & Measurement**

#### **Annual:**

In the APMR, summarize areas treated as reported in the GDP.

### **Acceptable Variance**

90% of identified noxious weeds must be treated

### **Response**

Adjust activities.



### **2.1.3 Maintenance of the Forested Landbase**

<b>Criterion 2:</b> Ecosystem Condition and Productivity	<b>Element 2.1:</b> Forest Ecosystem Condition and Productivity
<b>Value</b>	Healthy forest ecosystem
<b>Objective</b>	Forest ecosystem health will be maintained
<b>CSA Core Indicator</b>	2.1.3 Additions and deletions to the forest area (Repeated as 4.2.1)
<b>Indicator Statement</b>	<b>Percent of gross forested landbase in the Defined Forest Area converted to non-forest landuse through forest management activities (Same as 4.2.1)(AFMPS VOIT 2.1.2.1 &amp; 4.2)</b>
<b>Description of indicator</b>	Conversion to non-forest land use includes roads, gravel pits, camp clearings etc. Canfor Alberta will minimize the conversion of forested land to non-forested lands in their operations.
<b>Target</b>	<b>Forest management company activities not to exceed 3% reduction in gross Defined Forest Area over the life of the Forest Management Agreement (May 26, 1964)</b>
<b>Description of target</b>	The Defined Forest Area gross area is 644,695 ha. Conversion to non-forest land use includes construction of roads, gravel pits, camp clearings etc. Restoration of past land uses can convert those areas back to forest. The difference between the two numbers should not exceed 3% of the gross Defined Forest Area.

#### **Basis for the Target**

Maintenance of the forested landbase is important for sustaining the forest ecosystem. Conversion to non-forest by other industries is not under the control of Canfor, so will not be tracked in this indicator. However, Canfor does have indirect influence in the amount of forest converted to non-forest as indicated in strategies below.

#### **Means of Achieving Objective & Target (Strategies)**

Several strategies can be employed to achieve this target.

1. Maintain current forest cover inventory and land use updates
2. Will work with other industrial users to coordinate plans. The Foothills Landscape Management Forum is a prime example of where both forest companies and energy sectors are members and have developed a *Berland Smoky Regional Access Development Plan* (FLMF, 2011);

3. Minimize the conversion to non-forest by planning forestry roads using existing corridors wherever possible. Forest company camps, log storage areas, and other disturbances will use existing clearings where possible;
4. Reforest temporary roads that were used for timber extraction;
5. Work with Oil and Gas industry to reforest past land use openings; and
6. Strategic planning of road corridors

**Current Status**

In the 2016 timber year, Canfor applied for the following non-forest land use dispositions in the DFA:

- DLO 150150- Access road located in E ½ 33-60-04-W6M- 4.9 ha
- DML 160034- Gravel Pit located in NW 28-60-04-W6M- 31.9 ha

The percentage of forest land converted to non-forest land use by Canfor over the life of the FMA agreement (May 26, 1964) is 0.23%

**Table 17. Percentage of Land Converted to Non-Forest Land Use**

DFA Total Area (ha)	Area Converted to Non-Forest Area Use May 1/16 to April 30/17 (ha)	Net Non-Forest Area Dispositions as of April 30/17 (ha)	PERCENTAGE of Forest Land Converted to Non-Forest Land Use	Non-forest area Returned to Forest Land May 1/16 to April 30/17 (ha)	Total Non-forest Area Returned to Forest Land May 1/12 to April 30/17 (ha)	NET reduction in forest land area (ha)
644,695	36.8	1,526.3	0.2%	0.0	23.1	1,503.2

**Forecast**

Minimizing landbase conversion to non-forested conditions and maintenance of the forested landbase will result in sustainable forest ecosystems.

**Legal Requirements**

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 2.1.2.1 and 4.2*

**Monitoring & Measurement**

**Annual**

The DFA gross area is 644,695 ha. Conversion to non-forest land use includes construction of roads, gravel pits, camp clearings etc. In the APMR, all new dispositions will be quantified on the forest annually; as well as all dispositions in which Canfor has reclaimed and/or reforested, whether it be their own or for other disposition holders.

The cumulative total of Canfor dispositions will be compared to the 19,310 ha maximum. If the cumulative total approaches the maximum, a plan to return past dispositions to forest covers will be required.

**Acceptable Variance**

No variance

**Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **2.1.4 Balancing Approved Harvest Level over 5 Years**

<b>Criterion 2:</b> Ecosystem Condition and Productivity	<b>Element 2.1:</b> Forest Ecosystem Condition and Productivity
<b>Value</b>	Healthy forest ecosystem
<b>Objective</b>	Forest ecosystem health will be maintained
<b>CSA Core Indicator</b>	2.1.4 Proportion of the calculated long-term sustainable harvest level that is actually harvested
<b>Indicator Statement</b>	<b>Percent of volume harvested compared to long-term approved harvest level (Same as 5.1.1a) (AFMPS VOIT 5.1.1.1 &amp; 5.2.3)</b>
<b>Description of indicator</b>	Ensuring harvest levels do not exceed the long-term allowable harvest will help ensure sustainability of the forest and ecosystem, thereby providing timber and non-timber benefits now and into the future.
<b>Target</b>	<b>Not to exceed 100% of the approved harvest level (Annual Allowable Cut) over 5 years (5-year quadrant balance)</b>
<b>Description of target</b>	The <i>Forest Management Agreement (GoA, 2015b)</i> allows for over or under harvesting in any 1 year, but must be reconciled on a fixed five-year period. The reconciliation is a comparison of the actual versus allowed harvest levels. The target ensures that the company does not over-harvest.

#### **Basis for the Target**

The TSA is developed as per the legal requirements of the FMA (GoA, 2015b). The TSA involves the calculation of the long-term harvest level. Monitoring of the actual harvest level compared to the Annual Allowable Cut is a legal requirement that occurs monthly, and is audited by the Province annually. Any harvesting beyond the quadrant allowable harvest level is subtracted from the next period’s allowable harvest.

#### **Means of Achieving Objective & Target (Strategies)**

Harvest volumes are tracked and reported to the Province. The General Development Plan is prepared annually to summarize the harvested volumes and compares them to the Annual Allowable Cut. In the fifth year of the quadrant, the company planners and management will adjust the harvest level to ensure that the quadrant allowable harvest is not exceeded.

## Current Status

For the quadrant ending April 30, 2014, the conifer quadrant harvest level was 91% of the approved harvest level. Not all deciduous harvest volumes were available for reporting, but are projected to be significantly under the approved levels due to Tolko’s Oriented Strand Board mill not operating.

**Table 18. Current Quadrant Approved Level of Harvest**

Timber Disposition	Quadrant Period	Quadrant Harvest Level (m <sup>3</sup> )	Harvested as of April 30, 2017 (m <sup>3</sup> )	Percent	Remaining (m <sup>3</sup> )
FMA9900037 (Q1)	May 5, 2014 - April 30, 2019	3,513,674	1,712,704	49	1,800,970

## Forecast

Ensuring a sustainable flow of timber provides social, economic and environmental benefits to industry, communities and individuals.

## Legal Requirements

*Forest Act;*

*Timber Management Regulation;*

*Forest Management Agreement; and*

*Alberta Forest Management Planning Standard, Annex 4- Performance Standards*

## Monitoring & Measurement

### Periodic:

Evaluation of performance to this target will be completed when Timber Production Revenue (TPR) audited quadrant volumes are available.

### Annual:

Actual annual harvested volume is obtained from the TPR audit conducted by GoA and is reported in the General Development Plan and the APMR.

## Acceptable Variance

The actual quadrant harvest volume will not exceed 5% of the allowable harvest level

## Response

Adjust activities.

### **3.1.1a) Maintaining or Enhancing Soil Productivity by Minimizing Soil Disturbance**

<b>Criterion 3:</b> Soil and Water	<b>Element 3.1</b> Soil Quality and Quantity
<b>Value</b>	Soil Quality and Quantity
<b>Objective</b>	Soil productivity will be maintained or enhanced
<b>CSA Core Indicator</b>	3.1.1 Level of soil disturbance
<b>Indicator Statement</b>	<b>Percent of harvested blocks meeting soil disturbance objectives identified in the Operating Ground Rules (AFMPS VOIT 3.1.1.1)</b>
<b>Description of indicator</b>	The percentage of blocks meeting the Operating Ground Rules soil disturbance allowances will be calculated and tracked.
<b>Target</b>	<b>100% of harvested blocks will not exceed 5% soil disturbance without government approval as outlined in Canfor Operating Ground Rules</b>
<b>Description of target</b>	The Operating Ground Rules 9.0.3 state <i>“The total area covered by temporary roads, rutting, barred landing areas, and displaced soil created by timber operations shall not exceed five percent of each block without prior approval of Alberta. Blocks exceeding 5% but less than 10ha only require notification to Alberta.”</i> The block list in the Forest Harvest Plan (FHP) will identify blocks in which roads will exceed the 5% threshold. These blocks must have approval from the Province to achieve this target.

#### **Basis for the Target**

To minimize soil disturbance through monitoring and reporting and to continually seek ways to minimize the amount in the future. Soil disturbance in harvesting operations is an unavoidable consequence. 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.

#### **Means of Achieving Objective & Target (Strategies)**

Approval from the Province for blocks where the percentage are over 5% will demonstrate that the company will only surpass the threshold where necessary.

The FHP lists the blocks to be harvested, and the percentage of area to be occupied by roads planned for each individual block. The approval letter from the Province will acknowledge the Company’s diligence in this respect.

## Current Status

In the 2016 timber year, one block was over 5% soil disturbance; however had prior GoA approval as outlined in the *Canfor Operating Ground Rules*.

**Table 19. Percent of Blocks Exceeding 5% Soil Disturbance with Prior Approval**

# of Harvested Blocks in 2016 TY	# of Blocks Exceeding 5% Soil Disturbance	# of Blocks Exceeding 5% Soil Disturbance with Prior Approval	% of Blocks Exceeding 5% Soil Disturbance without Prior Approval
52	1	1	0%

## Forecast

Productive forest soils with minimized losses from forest operations.

## Legal Requirements

*Canfor Operational Ground Rules;*

*Timber Management Regulations; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 3.1.1.1*

## Monitoring & Measurement

### Annual:

After harvesting is completed, area of as built roads will be recalculated and compared to the approved blocks that exceeded the 5% disturbance. The percent of as built road area is calculated and reported annually in the AOP to the GoA. All blocks that exceeded 5% soil disturbance and did not receive prior approval from GoA will be reported in Canfor's Incident Tracking System (ITS) and in the APMR.

## Acceptable Variance

No variance

## Response

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

**3.1.1b) Maintaining or Enhancing Soil Productivity by Minimizing Soil Erosion and Slumping**

<b>Criterion 3: Soil and Water</b>	<b>Element 3.1: Soil Quality and Quantity</b>
<b>Value</b>	Soil Quality and Quantity
<b>Objective</b>	Soil erosion will be minimized
<b>CSA Core Indicator</b>	3.1.1 Level of soil disturbance
<b>Indicator Statement</b>	<b>Percent of soil erosion and slumping incidences with mitigation strategies implemented (AFMPS VOIT 3.1.1.2)</b>
<b>Description of indicator</b>	Loss of soil is a major concern for long-term productivity. Soil erosion is the removal of soil by either water or wind. Slumping denotes a type of mass wasting resulting in the down-slope movement of rock fragments and/or soil.
<b>Target</b>	<b>100% of known significant erosion and slumping events caused by forest operations will have mitigation strategies implemented within one year of identification</b>
<b>Description of target</b>	Soil erosion and slumping are often indicative of poor management practices. All incidents of significant erosion or slumping will be listed in Canfor's Incident Tracking System (ITS). Action plans and mitigation strategies will be in place in ITS.

**Basis for the Target**

Road construction, silviculture and harvesting activities have potential to cause soil erosion due to their propensity to alter drainage patterns and disrupt surface soil. Erosion and slumping can reduce the productivity of the forest soils. Operational practices that promote soil stability and minimize soil movement will be implemented.

**Means of Achieving Objective & Target (Strategies)**

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.

All significant in block slumps greater than 1000 m<sup>2</sup> and erosion events on roads where the erosion is greater than 20 cm deep by 3 m, caused by forest industry activities, will be documented with root cause investigations.



Locating these events will occur when:

- Company staff during annual road and final harvest inspections;
- Company planners are preparing harvest plans for an area;
- Harvesting operations personnel are working in the area;
- Silviculture staff are in the area following harvest for planting or site inspections and surveys;
- Periodic inspections after abnormal rainfall; and
- Notification from the Province or the public.

Action plans that include remediation of the damage and recommendations for modified management practices will be completed for all events.

### **Current Status**

There were no significant slumps or erosion events greater than or equal to 1000 m<sup>2</sup> caused by forest operations identified in the 2016 timber year.

### **Forecast**

Productive forest soils with minimized losses from forest operations.

### **Legal Requirements**

*Canfor Timber Harvest Planning and Operating Ground Rules;*

*Timber Management Regulation; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 3.1.1.2*

### **Monitoring & Measurement**

#### **Annual:**

All identified soil erosion and slumping events caused by forest operations will be entered into Canfor's Incident Tracking System (ITS) and include action plans for mitigation. The APMR will document all identified erosion and slumping events caused by forest operations and calculate the percentage with mitigation strategies implemented within 1 year.

### **Acceptable Variance**

No variance

### **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 3.1.2 Coarse Woody Debris

<b>Criterion 3:</b> Soil and Water	<b>Element 3.1:</b> Soil Quality and Quantity
<b>Value</b>	Soil Quality and Quantity
<b>Objective</b>	Maintain onsite coarse woody debris
<b>CSA Core Indicator</b>	3.1.2 Level of downed woody debris
<b>Indicator Statement</b>	<b>Percentage of harvested area with coarse woody debris equivalent to pre-harvest conditions (AFMPS VOIT 1.1.2.1b)</b>
<b>Description of indicator</b>	Coarse woody debris includes both downed woody debris and standing trees that have been left to allow the woody debris to decompose, resulting in organic matter that eventually becomes part of the soil (CSA Group, 2016).
<b>Target</b>	<b>100% of the harvested area will meet or exceed coarse woody debris conditions equivalent to the pre-harvest state</b>
<b>Description of target</b>	To ensure coarse woody debris is maintained in subunits at amounts that are similar, or greater than the pre-harvest state.

#### **Basis for the Target**

Coarse woody debris is composed of non-merchantable sound or rotting logs, stumps, or large branches that have fallen or been harvested and left in the woods. It also includes trees and branches that are dead but remain standing or leaning (Dunster & Dunster, 1996). The trees may have excessive rot or other defect factors that make them unsuitable for milling, they may be windfalls that are too old to utilize, or they may be snags that have to be felled for operational or safety reasons. Coarse woody debris provides centers of biological interaction and energy exchange, symbolizing in many ways the complexity of forest ecosystems. Long-term management of this resource is vital to maintain ecosystem integrity.

#### **Means of Achieving Objective & Target (Strategies)**

Harvesting operations will retain coarse woody debris throughout the block. Equipment operators will be encouraged to not skid coarse woody debris to roadside and remain dispersed on site.

#### **Current Status**

The table below is an indication of the amounts of pre-harvest coarse woody debris by yield group. The current harvesting practices, such as on the stump processing, non-utilization of MPB dead trees and deciduous all contribute to the amount of onsite coarse woody debris.

**Table 20. Pre-Harvest Coarse Woody Debris by Yield Group**

Yield Group	Description	Pre-Harvest CDW (m3/ha)	Number of Plots
1	AW+(S)-AB	65.8	65
2	AW+(S)-CD	45.5	192
3	AWSW/PBSW/BWSW	54	85
4	BW/BWAW+(S)	42.4	30
5	FB+OTHERS	104	87
6	H+(S)/S	48.9	66
7	PB+(S)	38.5	92
8	PL/PLFB+(H)	49.1	86
9	PLAW/AWPL	41.5	78
10	PLSB+OTHERS	46.1	57
11	PLSW/SWPL+(H)	84.4	78
12	SBLT/LTSB(G,M,F)	20.3	54
13	SBLT/LTSB(U)	10.8	32
14	SBPL/SBSW/SBFB	58.9	54
15	SW/SWFB+(H)-AB	76.4	101
16	SW/SWFB+(H)-CD	59.8	141
17	SWAW/SWAWPL	59.1	97

**Species:** PL = Lodgepole pine; SW = White spruce; SB = Black spruce; FB = Balsam fir; LT = Tamarack larch; AW = White aspen (Aspen); BW = White birch; H = Generic for any deciduous species (aspen, birch); S = Generic for any coniferous species (pine, spruce, etc.) OTH = includes other unidentified species when FB or PLSB are identified as the main leading species

Species descriptors: AB = refers to A and B stand densities (A being lower stems per ha than B); CD = refers to C and D stand densities (D being the highest stems per ha therefore the most dense type of stand); G,M,F = Timber productivity rating (site index) - "good, medium, fair"; U = timber productivity rating - uncommercial stand type

### Forecast

It is anticipated that the long-term management of coarse woody debris will maintain ecosystem integrity.

### Legal Requirements

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 1.1.2.1b*

### Monitoring & Measurement

**Annual:**

Complete CWD assessments annually and report the percent of harvested area that meets the pre-harvest CWD levels in the APMR.

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 3.2.1 Watershed Risk Level Assessments

<b>Criterion 3:</b> Soil and Water	<b>Element 3.2:</b> Water Quality and Quantity
<b>Value</b>	Water quantity
<b>Objective</b>	Water quantity will be maintained
<b>CSA Core Indicator</b>	3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance
<b>Indicator Statement</b>	<b>Watersheds with high risk level assessments with mitigation strategies implemented (AFMPS VOIT 3.2.1.1)</b>
<b>Description of indicator</b>	Watershed assessment under forest planning is intended to investigate potential impacts of the planned harvest on watershed values of concern. These values include flooding hazard, low flows, groundwater recharge, stream bank stability, fish habitat, drinking water impacts, water quality and quantity in general (AESRD, 2009).
<b>Target</b>	<b>100% of watersheds with a moderate or high risk level will have approved mitigation strategies implemented</b>
<b>Description of target</b>	The purpose of this watershed hazard assessment is to identify the impacts of the Preferred Forest Management Scenario on all watersheds within the Defined Forest Area and to successfully implement approved mitigation strategies on watersheds identified as potentially high risk (equivalent clear-cut area (ECA) >50%).

#### **Basis for the Target**

Watershed hazard assessment projects changes to the flow regime (frequency, timing and magnitude of peaks and low flows) from the planned harvesting (AESRD, 2009).

#### **Means of Achieving Objective & Target (Strategies)**

The strategy used in equivalent clear-cut area threshold and hazard levels calculations was developed by GoA, and was used in the development of the 2015 FMP PFMS SHS.

Those watersheds for which high impacts are projected will have mitigation strategies implemented, in consultation with and recommended by GoA, to protect watershed values. A list of potential mitigation strategies are provided in the *Canfor 2015 Forest Management Plan*.

### Current Status

Figure 16 depicts the baseline risk ranking of each watershed on the DFA based on *Canfor's 2015 Forest Management Plan (FMP) effective landbase*.

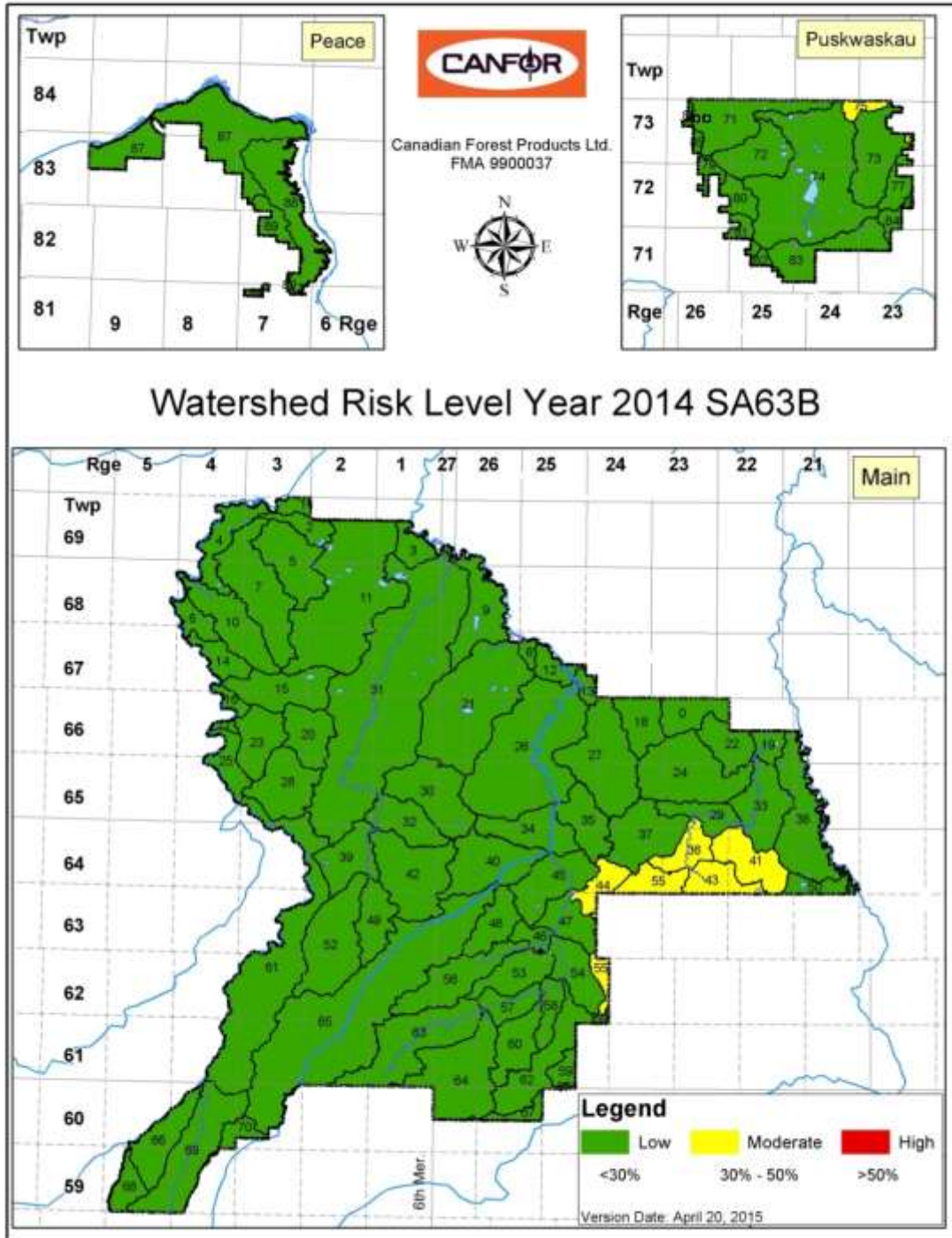


Figure 16: Watershed Risk Within the DFA

Canfor identified mitigation strategies that would be implemented within the 2016 harvest blocks in their Forest Harvest Plans and also made some block specific prescriptions to help mitigate risk to fish and water. These included prompt reclamation, upgraded water crossings, and increased buffers.

## **Forecast**

In the development of the Preferred Forest management Scenario (PFMS), Canfor constrained its timber supply model from harvesting watersheds above 50% ECA level (high risk), therefore reducing the risk to watersheds on the DFA. Figure 17 identifies where Canfor should implement mitigation strategies and best management practices based on the 10 year Spatial Harvest Sequence (SHS) in order to reduce the risk to watersheds. Implementation of best management strategies within the moderate and high risk watersheds will reduce impacts to water quality and quantity.



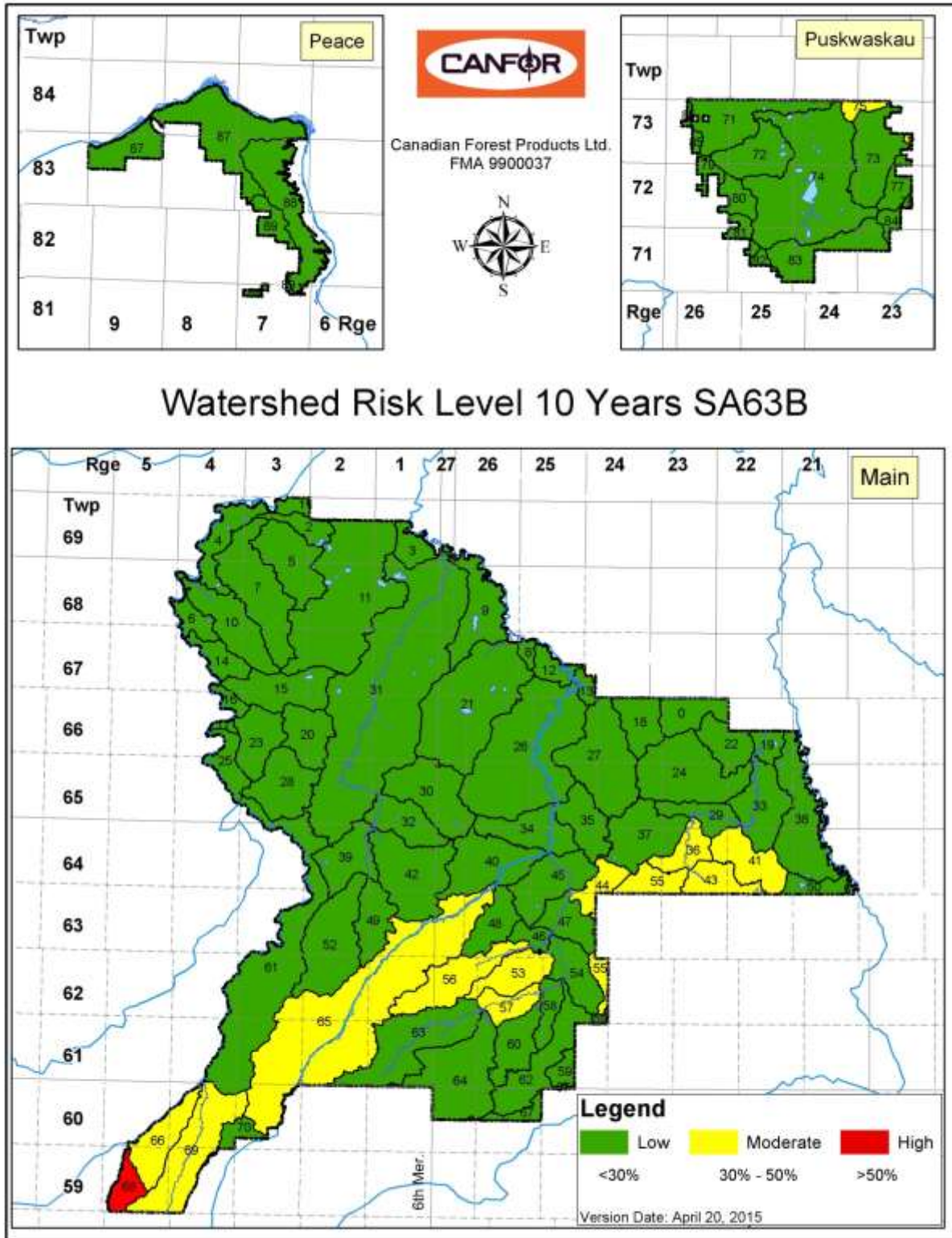


Figure 17: Forecasted Watershed Risk



## **Legal Requirements**

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 3.2.1.1*

## **Monitoring & Measurement**

### **Annual:**

Determine the watershed risk rankings from previous year's harvesting. Identify which of those watersheds had mitigation strategies implemented. In the APMR, report on the mitigation strategies implemented in the moderate and high risk watersheds.

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 3.2.2a) Drainage Structures

<b>Criterion 3:</b> Soil and Water	<b>Element 3.2:</b> Water Quality and Quantity
<b>Value</b>	Water quality
<b>Objective</b>	Water quality will be conserved
<b>CSA Core Indicator</b>	3.2.2 Proportion of forest management activities, consistent with prescriptions to protect identified water features
<b>Indicator Statement</b>	<b>Drainage structures with identified water quality concerns that have mitigation strategies implemented ( AFMPS VOIT 1.1.2.3)</b>
<b>Description of indicator</b>	Stream crossings by roads have a high potential to cause water quality issues. The structures must be monitored and repaired where necessary.
<b>Target</b>	<b>100% of medium and high hazard drainage structures will have mitigation strategies implemented according to the road maintenance plan for permanent Canfor Alberta roads</b>
<b>Description of target</b>	Annual inspections are compiled and entered into the Foothills Stream Crossing database. Those structures with a high or medium risk for adverse impact will be considered for remedial action based on timing of budget development and availability of resources for the following field season.

#### **Basis for the Target**

Stream crossings have the potential to cause water quality issues. Assessing and remediating those with issues is an ongoing task to ensure that impacts are minimized.

#### **Means of Achieving Objective & Target (Strategies)**

Canfor Alberta has elected to use the Foothills Stream Crossing Program (FSCP). The FSCP mandate is to:

- Monitor and improve the status of stream crossings;
- Develop and oversee the implementation of new ideas for stream crossing management in Alberta;
- Improve the environmental record of participating companies and organizations; and
- Collaborate and work together

After each field season, an annual Structure Maintenance Plan is developed and the current season's planned activities are submitted to GoA as a means of providing information on the maintenance and / or improvement of watersheds.

Initial inspections should be completed in the year after a new crossing has been installed. For all existing crossings, a schedule is being developed that identifies the structures for inspection, by watershed. Follow-up inspections are based on the age of a crossing and severity of defect found during the initial inspection. Where a crossing is removed, annual inspections are required until vegetation has established and the crossing site has stabilized.

The annual Structure Maintenance Plan in the AOP is a projection of remediation activities planned on those structures with the highest risk for adverse stream impacts. Remediation priorities will depend on sensitivity of watersheds and sufficient funding to complete some degree of repair to move the risk of that structure into a lower category.

Identifying priorities for remedial actions is determined using the information gathered during an inspection. Fish passage, safety and performance of the crossing structure and risk of erosion and sedimentation are all evaluated and summarized to risk rank the crossing as one of the following:

- High Risk – which describes fish migration issues, emergency repair of the crossing structure and high risk of sedimentation entering the stream
- Medium Risk – means the crossing may impede fish passage of some species or life stages at some point during the year, the crossing may present a blockage issue, a structural problem, or even a safety problem of missing signage and there is a medium risk of sedimentation entering the stream
- Low risk – means that fish passage resembles natural channel, no issues around safety or performance of the structure are identified and the potential of sediment to enter the stream is absent under normal high water flow conditions.

## **Current Status**

Canfor Alberta utilizes the FSCP to identify risk. The FSCP is administered by the Foothills Research Institute. The program is a credible standardized procedure that is used by other forest companies and other industrial users across Alberta.

Stream crossing inspections are completed in June and early July of each year. Any crossing inspections that indicate a high risk for safety are addressed immediately. As of 2016, remediation plans including the recommendations from the inspections for all medium and high hazard drainage structures are developed within six months of the stream crossing inspections. These remediation plans are scheduled to be implemented on a priority basis depending on lead-time for budgeting, and the availability of skills and resources.

Currently there are 200 crossings inspected; 102 (51%) pose a high risk to water quality and 72 (36%) pose a medium risk, 26 (13%) are low risk and none are no risk. Over the next four year period, Canfor Alberta should have all initial inspections of stream crossings completed.

**Table 21. Percent of Crossings in Remediation Plan**

Risk Ranking	Number of crossings by Risk	Percent of Total Crossings	Percent of Crossings in Remediation Plan	Number of Crossings in Remediation Plan repaired in 2014	Number of Crossings in Remediation Plan repaired in 2015	Number of Crossings in Remediation Plan repaired in 2016
High Risk Inspections	102	51%	100%	1	23	20
Medium Risk Inspections	72	36%	100%	9	11	11
Low Risk Inspections	26	13%	100%	31	13	13
No Risk Inspections	N/A	NA	NA	0	0	35
<b>Total Crossings Inspected</b>	<b>200</b>	<b>100%</b>	<b>100%</b>	<b>41</b>	<b>47</b>	<b>81</b>

### Forecast

Through the implementation of the “Means of Achieving Objective and Target (Strategies)”, it is anticipated that the reduction in the number of high-risk drainage structures in sensitive watersheds will improve the quality of water on the DFA in the long-term.

### Legal Requirements

*Federal Fisheries Act;*

*Canfor Timber Harvest Planning and Operating Ground Rules; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 3.2.1.1*

### Monitoring & Measurement

#### Periodic:

Each crossing is to receive an initial inspection, based on procedures outlined by the FSCP program. If a crossing has no issues, it will not be inspected for another five years. Where crossings present issues, they will be tracked and acted upon through the remediation plan. The year following the remediation work will see another inspection and depending on the results (establishment of vegetation and stabilization of the stream crossing) the crossing will fall back into a regular inspection regime.

#### Annual:

The number of medium and high hazard crossings that received required maintenance will be compared to the number of crossings planned for repairs in the AOP Structure Maintenance Plan and reported annually in the APMR.

### **Acceptable Variance**

90% of medium and high hazard drainage structures will have mitigation strategies implemented according to the road maintenance plan for permanent Canfor Alberta roads.

### **Response**

If the target is not met a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **3.2.2b) Effective Water Crossings and Maintenance**

<b>Criterion 3:</b> Soil and Water	<b>Element 3.2:</b> Water Quality and Quantity
<b>Value</b>	Water quality
<b>Objective</b>	Impact to water quality will be minimized
<b>CSA Core Indicator</b>	3.2.1 Proportion of forest management activities, consistent with prescriptions to protect identified water features
<b>Indicator Statement</b>	<b>Forestry water crossing construction and maintenance work in compliance with Code of Practice for Water Course Crossings or Operating Ground Rules (AFMPS VOIT 1.1.2.3)</b>
<b>Description of indicator</b>	Construction and maintenance activities on water crossings must follow the rules and regulations that apply.
<b>Target</b>	<b>100% of forestry water crossing construction and maintenance work in compliance with Code of Practice for Water Course Crossings or Operating Ground Rules</b>
<b>Description of target</b>	Active operations at water crossings (construction and maintenance) must be approved prior to the work being conducted. The operations must meet the conditions set out in the approval documents.

#### **Basis for the Target**

Construction and maintenance of water crossings must be completed with care and attention to all rules and regulations to ensure negative consequences are minimized. The *Code of Practice for Watercourse Crossings* applies to any crossings with a culvert 1.5 m and larger in diameter, or bridges with more than a single span (GoA, 2013b). The Operating Ground Rules (OGRs) apply to all smaller crossings not covered by the Code.

#### **Means of Achieving Objective & Target (Strategies)**

The AOP includes a Structure Maintenance Plan. Included in this plan is a listing of all work to be completed on roads and crossings. The approval of this plan will ensure that all crossings are planned in accordance to the Code or the OGRs, whichever apply. All completed maintenance or construction will follow the Code or the OGRs, whichever apply.

#### **Current Status**

Work was completed on 81 permanent stream crossings in the 2016 timber year. All work was completed within the *Code of Practice for Watercourse Crossings* and OGRs.

## **Forecast**

It is anticipated that through ensuring that all active operations at water crossings, including maintenance and construction, are completed and approved to the standards of the *Code of Practice for Watercourse Crossings* and the OGRs that water quality will be maintained.

## **Legal Requirements**

*Code of Practice for Water Course Crossings;*

*Water Act;*

*Timber Management Regulations;*

*Canfor Timber Harvest Planning and Operating Ground Rules; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards*

## **Monitoring & Measurement**

### **Annual:**

All non-compliances to the *Code of Practice for Watercourse Crossings* and OGRs in regards to crossing maintenance and construction will be entered into Canfor's Incident Tracking System (ITS) and reported annually in the APMR

## **Acceptable Variance**

No variance

## **Response**

If the target is not met a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 3.2.2c) Riparian Management

<b>Criterion 3:</b> Soil and Water	<b>Element 3.2:</b> Water Quality and Quantity
<b>Value</b>	Water Quality
<b>Objective</b>	Impact to water quality will be minimized
<b>CSA Core Indicator</b>	3.2.2 Proportion of forest management activities, consistent with prescriptions to protect identified water features
<b>Indicator Statement</b>	<b>Number of non-compliances where forest operations are not consistent with riparian management requirements as identified in operational plans (AFMPS VOIT 1.1.1.6 &amp; 3.2.2.1)</b>
<b>Description of indicator</b>	Infractions would indicate systems failures around protecting riparian areas.
<b>Target</b>	<b>Zero non-compliances, specific to Operating Ground Rules, with riparian management requirements in forest operations</b>
<b>Description of target</b>	Operating Ground Rules infractions involving riparian areas reported to the Province, or found by the Province will be tracked in Canfor's Incident Tracking System (ITS).

#### **Basis for the Target**

Riparian management areas provide opportunities for connectivity of forested cover along waterways, which are generally areas with high value for wildlife habitat and movement. They also help minimize sediment deposition from erosion and help regulate water temperatures by providing shade from standing vegetation and coarse woody debris along water bodies.

#### **Means of Achieving Objective & Target (Strategies)**

Block and road layout prior to harvest requires the identification of all riparian areas (as per Operating Ground Rules). Operating and road maintenance plans will include operational strategies for riparian areas.

#### **Current Status**

No non-compliances related to riparian management requirements were reported in Canfor's Incident Tracking System (ITS) in the 2016 timber year.



## **Forecast**

By following the “Means of Achieving Objective and Target (Strategies)” sections of this indicator, it is anticipated that properly functioning riparian systems leading to the conservation of fish habitat and maintenance of water quality.

## **Legal Requirements**

*Timber Management Regulations;*

*Canfor Timber Harvest Planning and Operating Ground Rules;*

*Federal Fisheries Act;*

*Water Act; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards*

## **Monitoring & Measurement**

### **Annual:**

All non-compliances specific to the OGR riparian management requirements will be entered into Canfor’s Incident Tracking System (ITS) and reported annually in the APMR

## **Acceptable Variance**

No variance

## **Response**

Remediation of any outstanding issues is the first priority. All incidents are investigated. Root cause analysis is conducted where the cause is not clear. Strategies and procedures will be modified where appropriate.

### **4.1.1 Carbon Uptake and Storage Monitoring**

<b>Criterion 4:</b> Role in Global Ecological Cycles	<b>Element 4.1:</b> Carbon Uptake and Storage
<b>Value</b>	Carbon uptake and storage
<b>Objective</b>	Carbon uptake and storage (i.e. carbon balance) will be maintained
<b>CSA Core Indicator</b>	4.1.1 Net carbon uptake
<b>Indicator Statement</b>	<b>The tonnes of carbon stored in each of the carbon pools (AFMPS VOIT 4.1)</b>
<b>Description of indicator</b>	Carbon Budget Models are available to evaluate the management scenarios.
<b>Target</b>	<b>Achieve 100% of the carbon stored in each of the carbon pools as defined by the Preferred Forest Management Scenario forecast</b>
<b>Description of target</b>	The outputs of a Carbon Budget Model will enable the company to review the sources, sinks and pools of carbon that form the carbon cycle on the Defined Forest Area. This will allow the development of strategies to minimize the carbon footprint of the operations.

#### **Basis for the Target**

Forests are a large carbon pool in the carbon cycle. Carbon fluxes into and out of this pool are both natural and anthropogenic. Forest managers recognize their role in managing the anthropogenic impacts and influencing the natural ones. Strategies to manage direct impacts include prompt tree regeneration (Indicator 2.1.1a) and minimizing the conversion of forested land to non-forested (Indicator 2.2.1). Forest fuel management is a method of influencing natural negative carbon fluxes by reducing fire risk.

Science about the role of forests and forest products in the carbon cycle is evolving. Models for calculating a forest carbon budget are being developed, both provincially and regionally, that will 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.

#### **Means of Achieving Objective & Target (Strategies)**

The CFS-CBM-3 model developed by the Canadian Forest Service has been used to forecast the amount of carbon stored in each carbon pool under the PFMS. Following this harvest forecast will result in achieving these target values on the ground.

## Current Status

The current status is indicated in the table below.

## Forecast

The table below shows the forecast tonnes of carbon in each of the carbon pools.

**Table 22. Carbon Sequestration by Carbon Pool**

Year	DFA Carbon Sequestration by Carbon Pool (millions of tonnes of Co <sup>2</sup> e)			
	Above Ground Biomass	Below Ground Biomass	Dead Organic Matter	Soil Biomass
Baseline	29.0	6.6	48.0	52.4
2014 TY	28.8	6.5	47.9	52.4
2015 TY	28.8	6.5	47.8	52.5
Current (2016TY)	28.9	6.5	47.8	52.5
10	27.0	6.1	47.5	52.8
20	25.3	5.8	47.2	53.4
50	22.0	5.1	45.1	55.0
100	21.4	5.0	43.7	56.5
200	21.0	4.9	44.2	56.6

## Legal Requirements

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 4.1*

## Monitoring & Measurement

### Periodic:

The amount of carbon stored in each of the carbon pools will be calculated annually using the CFS-CBM-3 modelling process based on the previous year's harvest. The amount of carbon will be reported annually in the APMR to ensure that the levels are trending towards the amounts forecasted in the PFMS.

## Acceptable Variance

+/-20% of the PFMS for the 10 year forecast values.

## Response

If the target is not met a root cause analysis will be completed to determine cause. Once cause is determined the process may be modified.

#### **4.1.2 Maintenance of Carbon Uptake and Storage**

<b>Criterion 4:</b> Role in Global Ecological Cycles	<b>Element 4.1:</b> Carbon uptake and storage
<b>Value</b>	Carbon uptake and storage
<b>Objective</b>	Carbon uptake and storage (i.e. carbon balance) will be maintained
<b>CSA Core Indicator</b>	4.1.2 Reforestation Success (Repeated as 2.1.1)
<b>Indicator Statement</b>	<b>Reforestation success (AFMPS VOIT 2.1.1.1)</b>
<b>Description of indicator</b>	Successful reforestation helps to keep the forest healthy and vigorous thus maintaining carbon uptake and storage on the landscape.
<b>Target</b>	<b>Refer to 2.1.1a) 2.1.1b) and 2.1.1c)</b>
<b>Description of target</b>	Reforestation success is achieved through multiple means and can include prompt reforestation, prompt retreatment of failed areas, and meeting or exceeding regenerated stand yield assumptions.

Refer to targets listed under CSA Core Indicator 2.1.1 *Reforestation success*:

- 2.1.1a) *Prompt Reforestation to Maintain Forest Condition and Productivity*;
- 2.1.1b) *Success of Reforestation Program to Promote Condition and Productivity*; and
- 2.1.1c) *Growth Rate of Regenerating Forests to Promote Forest Condition and Productivity*

## 4.2 Sustained Yield of Timber

<b>Criterion 4:</b> Role in Global Ecological Cycles	<b>Element 4.2:</b> Forest Land Conversion
<b>Value</b>	Sustainable yield of timber
<b>Objective</b>	Limit the conversion of productive forest to other uses
<b>CSA Core Indicator</b>	4.2.1 Additions and deletions to the forest area (Repeated as 2.1.3)
<b>Indicator Statement</b>	<b>Percent of gross forested landbase in the Defined Forest Area converted to non-forest land use through forest management activities (Same as 2.1.3) (AFMPS VOIT 2.1.2.1)</b>
<b>Description of indicator</b>	Conversion to non-forest land use includes roads, gravel pits, camp clearings etc. The forest companies will minimize the conversion of forested land to non-forested lands in their operations.
<b>Target</b>	<b>Forest management company activities not to exceed 3% reduction in gross forest landbase in the Defined Forest Area over the life of the Forest Management Agreement area</b>
<b>Description of target</b>	The Defined Forest Area gross area is 644,695 ha. Conversion to non-forest land use includes construction of roads, gravel pits, camp clearings etc. Restoration of past land uses can convert those areas back to forest. The difference between the two numbers should not exceed 3% of the gross Defined Forest Area.

Refer to indicator 2.1.3 *Maintenance of the Forested Landbase* for the detailed write up.

**5.1.1a) Timber Benefits**

<b>Criterion 5:</b> Economic and Social Benefits	<b>Element 5.1:</b> Timber and Non-Timber Benefits
<b>Value</b>	Sustainable yield of timber and non-timber benefits
<b>Objective</b>	Sustainable forest management that maintains timber and non-timber benefits
<b>CSA Core Indicator</b>	5.1.1 Documentation of the diversity of timber and non-timber resources, including products and services produced in the Defined Forest Area
<b>Indicator Statement</b>	<b>Percent of volume harvested compared to long-term approved harvest level</b> (Same as 2.1.4) (AFMPS VOIT 5.1.1.1)
<b>Description of indicator</b>	Ensuring harvest levels do not exceed the long-term allowable harvest will help ensure sustainability of the forest and ecosystem, thereby providing timber and non-timber benefits now and in the future.
<b>Target</b>	<b>Not to exceed 100% of the approved harvest level (Annual Allowable Cut) over 5 years (5-year quadrant balance)</b>
<b>Description of target</b>	The <i>Forest Management Agreement (GoA, 2015b)</i> allows for over or under harvesting in any one year, but must be reconciled on a fixed five-year quadrant. The reconciliation is a comparison of the actual versus allowed harvest levels. The target ensures that the company does not over-harvest.

Refer to indicator 2.1.4 *Balancing Approved Harvest Level over 5 Years* for the detailed write up.

### 5.1.1b) Diversity of Timber and Non-Timber Products

<b>Criterion 5:</b> Economic and Social Benefits	<b>Element 5.1:</b> Timber and Non-Timber Benefits
<b>Value</b>	Sustainable yield of timber and non-timber benefits
<b>Objective</b>	Sustainable forest management that maintains timber and non-timber benefits
<b>CSA Core Indicator</b>	5.1.1 Documentation of the diversity of timber and non-timber resources, including products and services produced in the Defined Forest Area
<b>Indicator Statement</b>	<b>Diversity of timber and non-timber resources produced from the Defined Forest Area (No AFMPS VOIT)</b>
<b>Description of indicator</b>	The DFA is rich in timber and non-timber resources. The maintenance of these resources is important for social, economic, and ecological values
<b>Target</b>	<b>Report on the diversity of timber and non-timber resources produced from the Defined Forest Area annually</b>
<b>Description of target</b>	Canfor Alberta will report on the timber and non-timber resources produced from the DFA

#### Basis for the Target

The DFA is rich in timber and non-timber resources. Each of these resources are important to providing some sort of economic, social or ecological value to the public. Awareness and consideration of the diversity of timber and non-timber resources produced from the DFA in forest management planning will ensure that these values can be maintained into the future.

#### Means of Achieving Objective & Target (Strategies)

The company will identify what resources are being produced from the DFA (timber and non-timber)

#### Current Status

Timber Resources

- Lumber
- OSB
- Pulp Chips
- Bio Energy

## Non-Timber Resources

- Oil and Natural Gas
- Hunting & Outfitting
- Fishing
- Trapping
- Berry Picking
- Medicinal Plants
- Grazing
- Camping
- OHV use
- Boating and Canoeing
- Hiking
- Water

## Forecast

Timber and non-timber resources will be maintained on the DFA.

## Legal Requirements

*None*

## Monitoring & Measurement

### Annual:

Identify and report in the APMR all timber and non-timber resources produced from the DFA

## Acceptable Variance

No variance

## Response

Adjust activities.



### **5.1.1c) Maintenance of Recreational Areas**

<b>Criterion 5:</b> Economic and Social Benefits	<b>Element 5.1:</b> Timber and Non-Timber Benefits
<b>Value</b>	Sustainable yield of timber and non-timber benefits
<b>Objective</b>	Sustainable forest management that maintains timber and non-timber benefits
<b>CSA Core Indicator</b>	5.1.1 Documentation of the diversity of timber and non-timber resources, including products and services produced in the Defined Forest Area
<b>Indicator Statement</b>	<b>Maintenance of recreational areas for non-timber values (AFMPS VOIT 5.2.2.1)</b>
<b>Description of indicator</b>	The company will maintain recreational areas on the Defined Forest Area for public use.
<b>Target</b>	<b>Canfor Alberta will maintain a minimum of 3 recreational areas for use by the public within Defined Forest Area</b>
<b>Description of target</b>	Canfor Alberta will maintain recreational areas, such as campsites, on the Defined Forest Area for public use.

#### **Basis for the Target**

Recreational use of the DFA is a common non-timber value. The company will continue to maintain recreational areas for public use in at least three sites.

#### **Means of Achieving Objective & Target (Strategies)**

The company will fund, or seek funding to maintain recreational areas such as MacLeod Flats, Economy Lake, Westview, and Frying Pan Creek.

#### **Current Status**

Canfor Alberta currently maintains four recreational areas on the DFA.

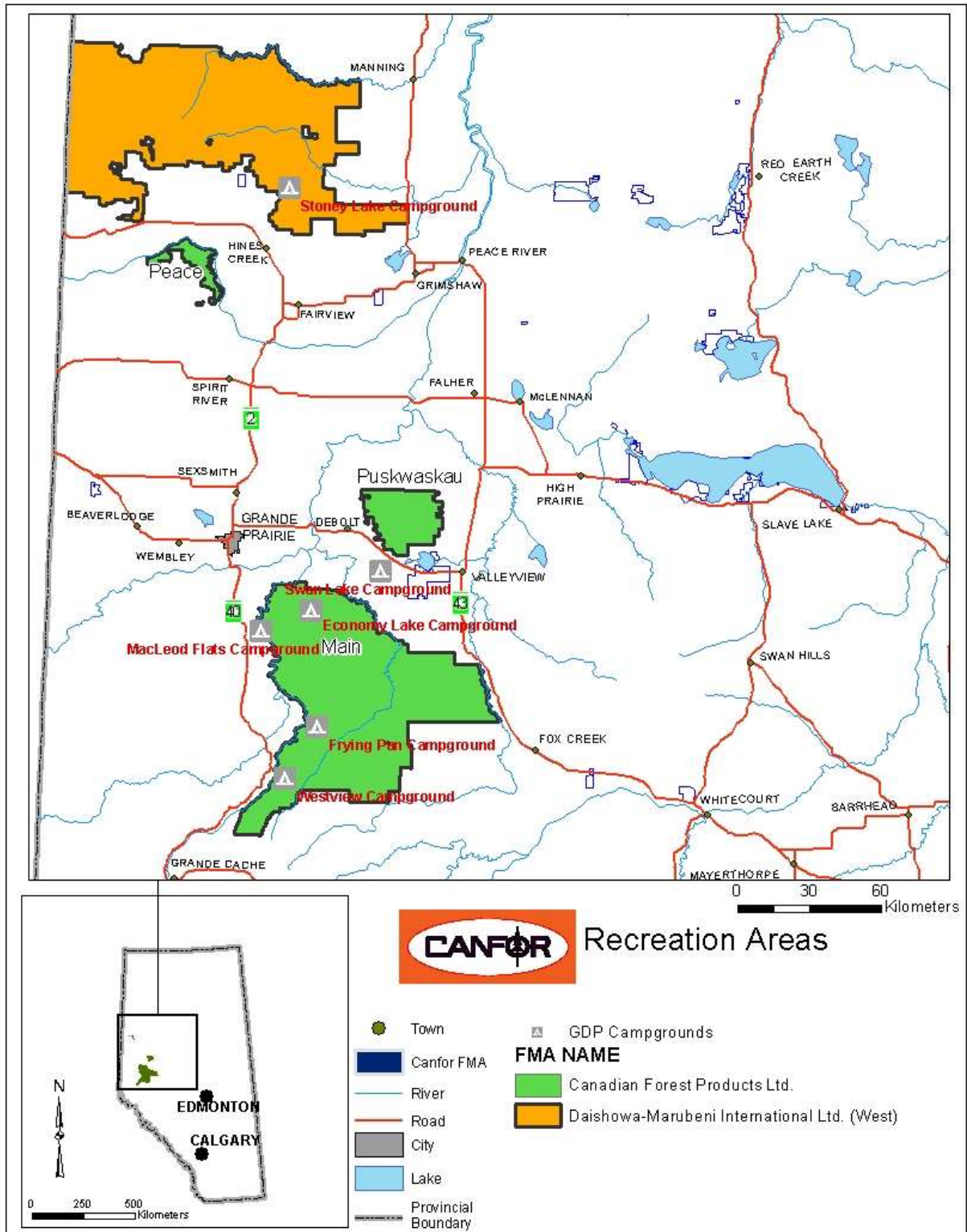


Figure 18: Recreation Areas Within the DFA

## **Forecast**

Recreational campsites on the DFA will be continually available for public use, thus ensuring that the common non-timber value of recreation is maintained.

## **Legal Requirements**

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 5.2.2.1*

## **Monitoring & Measurement**

### **Annual:**

Documentation showing contractual agreements for recreational areas maintenance will indicate which recreational areas supported. The APMR will report on the number of recreational areas maintained annually.

## **Acceptable Variance**

No variance

## **Response**

Adjust activities.

### 5.1.2a) Communications with Trappers

<b>Criterion 5:</b> Economic and Social Benefits	<b>Element 5.1:</b> Timber and Non-Timber Benefits
<b>Value</b>	Sustainable yield of timber and non-timber benefits
<b>Objective</b>	Sustainable forest management that maintains timber and non-timber benefits
<b>CSA Core Indicator</b>	5.1.2 Evidence of open and respectful communications with forest dependent businesses, forest users and local communities to integrate non-timber resources into forest management planning. When significant disagreement occurs, efforts towards conflict resolution are documented
<b>Indicator Statement</b>	<b>Compliance with trapper notifications as outlined in the Operating Ground Rules (AFMPS 5.2.2.1)</b>
<b>Description of indicator</b>	Notifying and communicating with trappers as outlined in the Operating Ground Rules will ensure that their interests are considered in forest management planning
<b>Target</b>	<b>100% of trappers will be notified as outlined in the Canfor Operating Ground Rules. Where there is communicated disagreement regarding the Organization’s forest management activities, evidence of efforts towards conflict resolution are documented</b>
<b>Description of target</b>	Non-compliance to the target will be tracked in Canfor’s Incident Tracking System (ITS). Communications with trappers requiring actions will also be tracked in ITS.

#### **Basis for the Target**

Trapping is a viable use of a naturally renewable resource. There are 58 Registered Fur Management Areas (RFMAs) in Canfor’s DFA. It is important that trappers are notified of plans prior to operations to avoid damage to infrastructure associated with their RFMA as well as to integrate plans so that both resources are maintained. The Operating Ground Rules outline requirements of communication between forest operators and trappers.

#### **Means of Achieving Objective & Target (Strategies)**

The company will communicate with trappers as outlined in the Operating Ground Rules. All communicated disagreements will be recorded into COPI with evidence of efforts of conflict resolution.

### **Current Status**

Trappers are notified of activities planned within their RFMA during the preparation of a FHP and at least ten days prior to commencement of operations as per the Operating Ground Rules.

### **Forecast**

The trapping resource will be maintained on the DFA

### **Legal Requirements**

*Canfor Operating Ground Rules; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 5.2.2.1*

### **Monitoring & Measurement**

#### **Annual:**

Completion of trapper notification is recorded for each block in Canfor's *Trimble Resources* database. Non-compliance to the Operating Ground Rules in regards to trapper notification will be reported in Canfor's Incident Tracking System (ITS) and in the APMR each year. Communications with trappers are recorded in COPI that include actions to address any identified issues or conflicts.

### **Acceptable Variance**

No variance

### **Response**

Adjust activities.

### **5.1.2b) Purchase and Sales with other Forest Products Businesses**

<b>Criterion 5.</b> Economic and Social Benefits	<b>Element 5.1:</b> Timber and Non-Timber Benefits
<b>Value</b>	Sustainable yield of timber and non-timber benefits
<b>Objective</b>	Sustainable forest management that maintains timber and non-timber benefits
<b>CSA Core Indicator</b>	5.1.2 Evidence of open and respectful communications with forest dependent businesses, forest users and local communities to integrate non-timber resources into forest management planning. When significant disagreement occurs, efforts towards conflict resolution are documented
<b>Indicator Statement</b>	<b>Evidence of open and respectful relationships with fiber dependent businesses (No AFMPS VOIT)</b>
<b>Description of indicator</b>	Canfor Alberta engages with other fiber dependant businesses to integrate operations and build business relationships to develop a more economically and socially diverse community
<b>Target</b>	<b>Evidence of minimum of 5 relationships with other fiber dependent businesses annually</b>
<b>Description of target</b>	Relationships include business purchases, sales, or trading as well as communications regarding planning and operational activities

#### **Basis for the Target**

Support for local communities through business relationships (defined for this indicator as purchases, sales, trading of primary forest products and forest by-products, and communications regarding planning and operational activities) provides employment diversification, increased local revenue and a stronger sustainable industry.

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 fiber dependent businesses and forest users is desirable.

#### **Means of Achieving Objective & Target (Strategies)**

Often, fiber dependent businesses seek and maintain active, mutually beneficial business relationships (purchases, sales, trade arrangements, and communications regarding planning

and operations) with other forest products businesses within close vicinity to their area of operations. Key to these relationships are the open communications that occur during forest planning and operations. Canfor Alberta often purchases primary products such as saw logs and by-products such as hog fuel and also sells oversized saw logs, saw logs, pulp logs, and chips. These agreements are generally covered under contracts that have dispute resolution mechanisms to ensure that the relationships are fair for the parties involved.

**Current Status**

In the 2016 timber year, Canfor actively initiated and participated in relationships with six fiber dependent businesses within the vicinity of the DFA.

**Table 23. Relationships with Forest Products Businesses**

Forest Industry User	Evidence of Relationship
Norbord Inc.	Fiber Agreements/Consultation on AOP/GDP
DMI	Fiber Agreements/Operational Meetings/Interactions
Tolko	Consultation on AOP/GDP
Weyerhaeuser	Fiber Agreements
International Paper	Fiber Agreements
Millar Western	Fiber Agreements
Total # of Relationships	<b>6</b>

**Forecast**

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.

**Legal Requirements**

None

**Monitoring & Measurement**

**Annual:**

In the APMR report the total number of relationships with other fiber dependent businesses. Tracking is based on the number of relationships, not the number of transactions within each relationship. Record conflicts that arise in connection to the relationships as well as efforts made to resolve the disputes.

**Acceptable Variance**

A minimum of 4 relationships with other fiber dependent businesses annually.

**Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

**5.1.2c) Communications with Local Municipalities, Communities, and Forest Users**

<b>Criterion 5. Economic and Social Benefits</b>	<b>Element 5.1: Timber and Non-Timber Benefits</b>
<b>Value</b>	Sustainable yield of timber and non-timber benefits
<b>Objective</b>	Sustainable forest management that maintains timber and non-timber benefits
<b>CSA Core Indicator</b>	5.1.2 Evidence of open and respectful communications with forest dependent businesses, forest users and local communities to integrate non-timber resources into forest management planning. When significant disagreement occurs, efforts towards conflict resolution are documented
<b>Indicator Statement</b>	<b>Communications with local municipalities, communities, and other forest users (No AFMPS VOIT)</b>
<b>Description of indicator</b>	Regular communication with local municipalities, communities, and other forest users will ensure that local interests and values are considered in forest management planning
<b>Target</b>	<b>Evidence of minimum of 4 communications with local municipalities, communities, and other forest users. Where there is communicated disagreement regarding the organization’s forest management activities, evidence of efforts towards conflict resolution are documented.</b>
<b>Description of target</b>	Report annually the number of communications with local municipalities, communities, and other forest users

**Basis for the Target**

Regular and open communications with local municipalities, communities, and other forest users ensures that parties are informed of the activities being planned and conducted within their areas of interest as well as provides opportunities for local interests and values to be considered in forest management planning.

**Means of Achieving Objective & Target (Strategies)**



Participating in meetings with local municipalities and communities as well as providing opportunities such as Open Houses for other forest users and the general public to attend. All communicated disagreements will be recorded into COPI with evidence of efforts of conflict resolution.

### **Current Status**

In the 2016 timber year, Canfor actively initiated and participated in several Grande Prairie Chamber of Commerce and Municipal Meetings. Open houses were also held to engage with other forest users regarding DFA operational plans.

### **Forecast**

Local interests and values will be maintained

### **Legal Requirements**

*None*

### **Monitoring & Measurement**

#### **Annual:**

Annually in the APMR, report the total number of communications such as meetings and Open Houses with local municipalities, communities, and other forest users as well as any communicated disagreements with evidence of efforts of conflict resolution.

### **Acceptable Variance**

A minimum of 3 communications with local municipalities, communities, and other forest users annually.

### **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **5.2.1a) Local Contract Services**

<b>Criterion 5:</b> Economic and Social Benefits	<b>Element 5.2:</b> Communities and Sustainability
<b>Value</b>	A range of benefits to local communities
<b>Objective</b>	Local communities and contractors will have the opportunity to share in benefits such as jobs, contracts and services
<b>CSA Core Indicator</b>	5.2.1 Level of participation and support in initiatives that contribute to community sustainability
<b>Indicator Statement</b>	<b>Investment in local communities</b> (AFMPS VOIT 5.2.2.1)
<b>Description of indicator</b>	The indicator reflects a desire to enhance community well-being.
<b>Target</b>	<b>Over a rolling 5-year period, a minimum of 75% of Canfor Alberta forest operations dollars paid for contract services will be expended locally</b>
<b>Description of target</b>	A calculation will be conducted annually of the dollars paid for local contract services and total contract services.

#### **Basis for the Target**

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 a local 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.

#### **Means of Achieving Objective & Target (Strategies)**

Opportunities will be provided to local contractors.

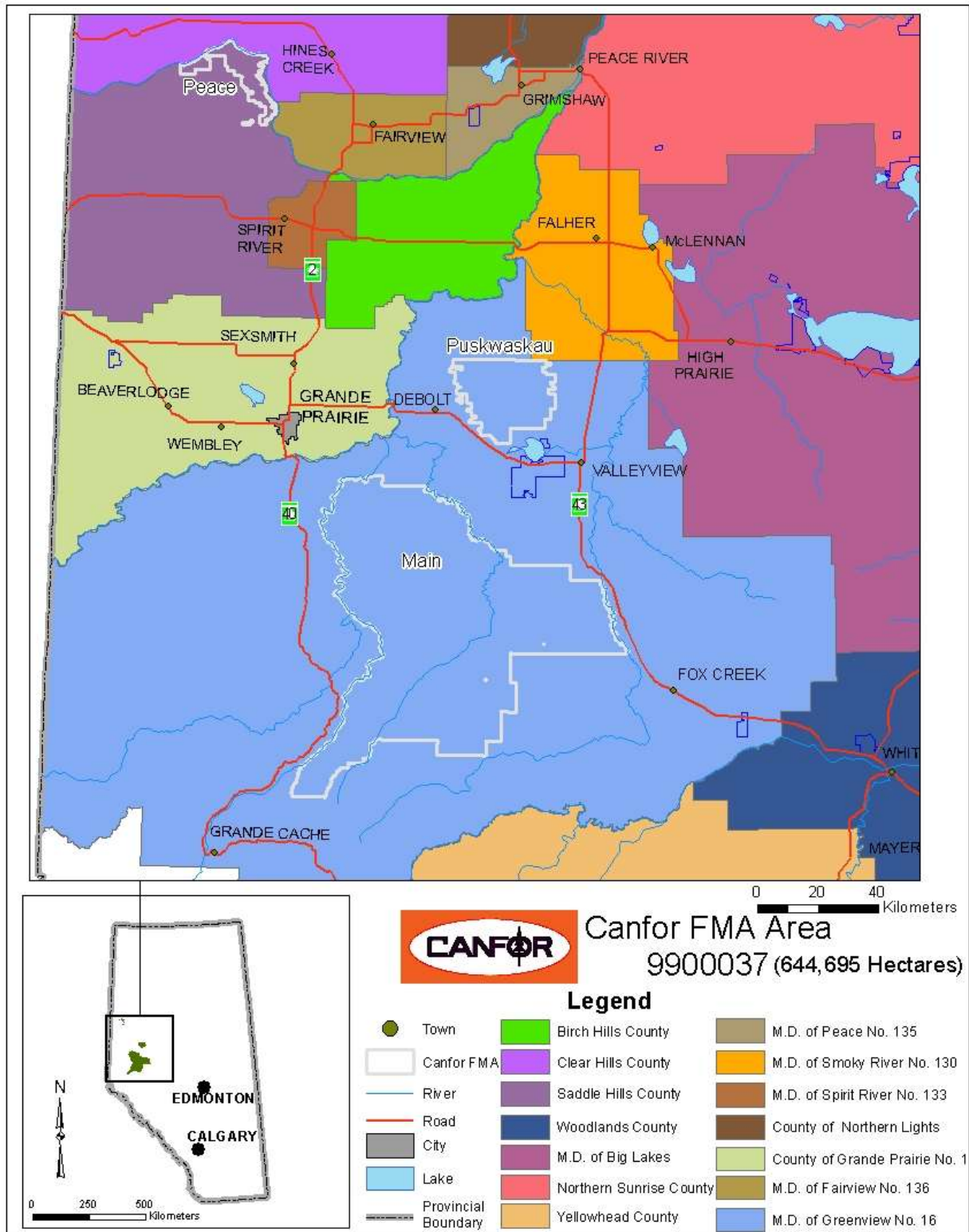


Figure 19: Municipal Districts Within the Vicinity of the DFA

## Current Status

During the five year period from 2012-2016, 91% of the dollars paid by Canfor Alberta were for local contract services.

**Table 24. Investment in Local Communities**

Contribution	2012	2013	2014	2015	2016
Local Contract Services (\$ millions)	49.5	47.9	54.9	81.5	65.8
Non-Local Contract Services (\$ millions)	5.5	4.3	5.4	6.9	8.5
Subtotal	55.0	52.2	60.2	88.4	74.3
<b>% Local Contract Services (5 year rolling avg.)</b>	<b>89%</b>	<b>90%</b>	<b>90%</b>	<b>91%</b>	<b>91%</b>

## 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.

## Legal Requirements

None.

## Monitoring & Measurement

### Annual:

Canfor Alberta will track all spending pertaining to forest related activities (operations, management) within the DFA, separated by that occurring locally. The total dollar value of contract services considered local will be calculated relative to the total dollar value of all contract 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 and will be reported in the APMR.

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. Local communities were defined by the FMAC in 2011 to include all communities and municipalities as depicted in Figure 19.

## Acceptable Variance

No variance

## Response

Adjust activities.

### **5.2.1b) Community Involvement**

<b>Criterion 5:</b> Economic and Social Benefits	<b>Element 5.2:</b> Communities and Sustainability
<b>Value</b>	A range of benefits to local communities
<b>Objective</b>	Local communities and contractors will have the opportunity to share in benefits such as jobs, contracts and services
<b>CSA Core Indicator</b>	5.2.1 Level of participation and support in initiatives that contribute to community sustainability
<b>Indicator Statement</b>	<b>Investment in local communities</b> (no AFMPS VOIT)
<b>Description of indicator</b>	The indicator describes efforts to enhance community well-being.
<b>Target</b>	<b>Canfor Alberta will provide financial/in-kind support to a minimum of 8 community events or services</b>
<b>Description of target</b>	Canfor Alberta is a supporter of the local community and this target will demonstrate the types of involvement.

#### **Basis for the Target**

Level of investment in initiatives that contribute to community sustainability.

#### **Means of Achieving Objective & Target (Strategies)**

Canfor Alberta has maintained a strong community presence since 1964 and will continue to provide financial/in-kind support in the local community.

#### **Current Status**

In the 2016 fiscal year, Canfor provided financial support to 16 community events and services:

1. Shock Trauma Air Rescue Service Foundation (STARS);
2. Grande Prairie Regional Emergency Medical Services (GPREMS);
3. QE11 Hospital Foundation;
4. Grande Prairie Regional Hospital Foundation;
5. Grande Prairie Firefighters Charity Foundation (Sparky's Wish);
6. Ronald McDonald House Northern Alberta;
7. Girl Guides of Canada;
8. Clear Hills Agri-show;
9. Town of Sexsmith Chautauqua Days;

10. Grande Prairie PRIDE Society;
11. GP Public School Playgrounds;
12. Cleardale Ag Society outdoor hockey arena;
13. Duncan First Nations Elder Supper;
14. End of Steel Heritage Society;
15. Northern Spirit of Lights show; and
16. Big Brothers Big Sisters.

Canfor provided in-kind support to 5 community events and services:

1. Salvation Army (food bank and adopt a family);
2. Nitehawk Ski Patrol (office space);
3. Arbour Day (Canfor foresters presentations to school classrooms);
4. Walk through the Forest (hosted wildlife and harvesting booth with Canfor forester presenters); and
5. Seedling donations to local high school and a community yoga event.

## **Forecast**

Through providing in kind and financial support to local communities, Canfor is contributing to the sustainability and well-being of the communities it operates in.

## **Legal Requirements**

*None*

## **Monitoring & Measurement**

### **Annual:**

The number of community events or services Canfor has provided financial/in-kind support will be reported in the APMR.

## **Acceptable Variance**

No variance

## **Response**

Adjust activities.

### **5.2.2 Employees and Contractors with Environmental and Safety Training**

<b>Criterion 5:</b> Economic and Social Benefits	<b>Element 5.2:</b> Communities and Sustainability
<b>Value</b>	A range of benefits to local communities
<b>Objective</b>	Local communities and contractors will have the opportunity to share in benefits such as jobs, contracts and services
<b>CSA Core Indicator</b>	5.2.2 Level of participation and support in training and skills development
<b>Indicator Statement</b>	<b>Training in environmental and safety procedures in compliance with company training plans</b> (No AFMPS VOIT)
<b>Description of indicator</b>	A trained workforce is critical to safe and proper execution of plans.
<b>Target</b>	<b>100% of Canfor FMG Alberta employees and contractors have required environmental and safety training</b>
<b>Description of target</b>	Environmental and safety training of FMG employees and contractors will demonstrate Canfor’s commitment to safety and the environment.

#### **Basis for the Target**

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.

#### **Means of Achieving Objective & Target (Strategies)**

Forest planning and operations are conducted with a genuine focus on worker safety and environmental stewardship. Canfor Alberta uses the internal FMG Training Matrix and a database (Eclipse Training) to schedule and record training for employees and has standard work procedures and pre-work forms to track contractor environmental training and safety certification.

#### **Current Status**

Canfor records from the 2016 timber year show that all Canfor FMG Alberta employees and DFA-related contractors have been given the required environmental and safety training as outlined by company training procedures.

## **Forecast**

It is expected that maintaining an active environmental and safety training program will lead to an educated workforce that performs their duties safely and environmentally responsibly.

## **Legal Requirements**

*None*

## **Monitoring & Measurement**

### **Annual:**

All training provided to employees will be tracked in Canfor's Eclipse training database and all training provided to contractors will be recorded in the contractor pre-work form. The training will be summarized from Eclipse and the pre-work forms and any training the percent of employees and contractors that have all required environmental and safety training will be reported in the APMR.

## **Acceptable Variance**

No variance

## **Response**

Ensure prompt completion of outstanding training.



### **5.2.3 Direct and Indirect Employment**

<b>Criterion 5:</b> Economic and Social Benefits	<b>Element 5.2:</b> Communities and Sustainability
<b>Value</b>	Fair distribution of benefits across communities
<b>Objective</b>	A fair distribution of benefits and costs will be ensured across all communities in the local area
<b>CSA Core Indicator</b>	5.2.3 Level of direct and indirect employment
<b>Indicator Statement</b>	<b>Level of direct and indirect employment (No AFMPS VOIT)</b>
<b>Description of indicator</b>	A measure of the company’s level of direct and indirect employment opportunities
<b>Target</b>	<b>Report annually on the trend of Canfor Alberta's level of direct and indirect jobs created from the Defined Forest Area</b>
<b>Description of target</b>	The level of direct and indirect employment will be calculated and reported annually.

#### **Basis for the Target**

*“The Canadian forest industry is a major employer nationwide. While the forest industry contributes to the economic, environmental and social welfare of all Canadians, these contributions are particularly important in many rural and Aboriginal communities, where forest-related work is often the main source of income.” (NRCan, 2013).*

Canfor Alberta contributes to direct and indirect employment within the local region and to sustainable harvesting by adhering to their apportioned harvest volume within the Defined Forest Area. Organizations that harvest at sustainable harvest levels in relation to the allocated supply levels continue to provide direct and indirect employment opportunities.

While employment levels have been declining in many manufacturing industries including the forest industry, there remains a strong relationship between direct and indirect employment and annual harvest levels.

#### **Means of Achieving Objective & Target (Strategies)**

Maintain harvest levels.

#### **Current Status**

Canfor’s production volume continues to be at or near the Annual Allowable Cut level, therefore direct and indirect employment levels are stable.

**Table 25. Level of Direct and Indirect Employment**

	Production Volume (m <sup>3</sup> )	Employment
Potential	714,100	1357
2013	505,296	960
2014	385,281	732
2015	724,699	1377
2016	602,724	1145

**Forecast**

Harvesting in relation to the allocated Annual Allowable Cut will provide and maintain employment and taxation revenue to local communities.

**Legal Requirements**

*None*

**Monitoring & Measurement**

**Annual:**

Natural Resources Canada statistical data (<http://cfs.nrcan.gc.ca/statsprofile>) indicates that approximately 1.9 direct and indirect jobs are created per 1000 m<sup>3</sup> of harvest. The coniferous Annual Allowable Cut for the DFA is 714,100 m<sup>3</sup>; therefore using a multiplier of 1.9 jobs per 1000 m<sup>3</sup>, the potential level of direct and indirect employment is 1364 jobs.

Report the annual production volume and the calculated number of jobs in the APMR each year including the trends from the previous years.

**Acceptable Variance**

No variance

**Response**

Not applicable

### **6.1.1 Engaged and Active Forest Management Advisory Committee**

<b>Criterion 6.</b> Society's Responsibility	<b>Element 6.1:</b> Fair and Effective Decision-Making
<b>Value</b>	Public participation and awareness
<b>Objective</b>	Promoting and providing an effective public participation and awareness process
<b>CSA Core Indicator</b>	6.1.1 Level of participant satisfaction with the public participation process
<b>Indicator Statement</b>	<b>Public advisory group maintained and satisfaction survey implemented (AFMPS VOIT 6.2.1.1)</b>
<b>Description of indicator</b>	Maintain Canfor Alberta's Forest Management Advisory Committee and implement the <i>Forest Management Advisory Committee Evaluation Form</i> .
<b>Target</b>	<b>80% annual satisfaction from surveys in all four targets</b>
<b>Description of target</b>	Target of 80% satisfaction in: Meeting and Forest Management Advisory Committee Process, Forest Management Advisory Committee Meeting Facilitation, Meeting Logistics, and Yearly Assessment.

#### **Basis for the Target**

The FMAC was established in 1995 to assist Canfor Alberta in developing FMP and a SFMP in 1999 by identifying local VOITs. The SFMP is an evolving document that will be reviewed for effectiveness and revised as needed with the assistance of FMAC to address changes in forest condition and local community values. Ensuring the continuing interest and participation of the FMAC is an integral part of a dynamic and responsive SFMP. 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 (Strategies)**

Canfor Alberta will provide all FMAC members a *Forest Management Advisory Committee Evaluation Form* (Canfor. (2012) to measure the effectiveness and awareness with the process. The survey will assist Canfor Alberta to improve on areas identified by FMAC. The survey content and process will be that described in the *Forest Management Advisory Committee Terms of Reference* (Appendix 2). All survey questions will have a one to four scoring assessment with one being very poor and four being very satisfied.

## Current Status

There were two Forest Management Advisory Committee (FMAC) meetings held in the 2016 timber year. One on October 19<sup>th</sup>, 2016 and the second was on April 26<sup>th</sup>, 2017. FMAC Members filled out a *Forest Management Advisory Committee Evaluation Form* for both meetings. All four categories were rated above 80% and there was 88.5% total satisfaction.

## Forecast

An active, engaged, and satisfied FMAC will be maintained to ensure that local values are considered in forest management planning.

## Legal Requirements

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 6.2.1.1*

## Monitoring & Measurement

### Annual:

The FMAC members will fill out the *Forest Management Advisory Committee Evaluation Form* after each meeting. Each of the four sections of the survey will be calculated and results will be compiled for each calendar year and reported in the APMR.

## Acceptable Variance

A minimum of 70% annual satisfaction from surveys from all 4 targets.

## Response

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **6.1.2a) Educational Opportunities**

<b>Criterion 6.</b> Society's Responsibility	<b>Element 6.1:</b> Fair and Effective Decision-Making
<b>Value</b>	Public participation and awareness
<b>Objective</b>	Promoting and providing an effective public participation and awareness process
<b>CSA Core Indicator</b>	6.1.1 Evidence of efforts to promote capacity development and meaningful participation in general
<b>Indicator Statement</b>	<b>The number of educational opportunities provided to the community (No AFMPS VOIT)</b>
<b>Description of indicator</b>	Providing educational opportunities to the community provides knowledge for better decisions.
<b>Target</b>	<b>A minimum of 5 educational opportunities provided to the community annually</b>
<b>Description of target</b>	Annually, Canfor Alberta will provide a minimum of 5 educational opportunities for the local community.

#### **Basis for the Target**

Canfor Alberta is committed to working with directly affected stakeholders and members of the public on forest management issues and has a well-established history of participation in community meetings, including local planning processes. The sharing of knowledge contributes to informed, balanced decisions and plans acceptable to the majority of public. 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 (Strategies)**

Canfor Alberta participates in many educational outreach initiatives:

1. An active Forest Management Advisory Committee;
2. Research projects;
3. Vegetation management plan open houses;
4. Annual Operating Plan and General Development Plan open houses;
5. Field tours; and
6. The Grande Prairie and Area Environmental Sciences Education Society.

## **Current Status**

Canfor Alberta provided 7 educational opportunities in the 2016 timber year:

1. An active Forest Management Advisory Committee (3 opportunities);
2. The Grande Prairie and Area Environmental Sciences Education Society;
3. Arbour Day;
4. Grande Prairie Composite High School presentation with Work Wild;
5. St. Mary's School Outdoor Education class field and mill tours;
6. UofA Emend student knowledge exchange session; and
7. Public Open Houses (2 opportunities).

## **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.

## **Legal Requirements**

*None*

## **Monitoring & Measurement**

### **Annual:**

List the type and number of opportunities Canfor Alberta offered annually in the APMR.

## **Acceptable Variance**

No variance

## **Response**

Adjust activities.

### **6.1.2b Educational Opportunities to Forest Management Advisory Committee**

<b>Criterion 6.</b> Society’s Responsibility	<b>Element 6.1:</b> Fair and Effective Decision-Making
<b>Value</b>	Public participation and awareness
<b>Objective</b>	Promoting and providing an effective public participation and awareness process
<b>CSA Core Indicator</b>	6.1.2 Evidence of efforts to promote capacity development and meaningful participation in general
<b>Indicator Statement</b>	<b>Number of educational opportunities for information/training/capacity building that are delivered to the public advisory group annually (No AFMPS VOIT)</b>
<b>Description of indicator</b>	Providing educational opportunities to the Forest Management Advisory Committee provides knowledge for better dialogue and ultimately better decisions.
<b>Target</b>	<b>Provide one educational opportunity per Forest Management Advisory Committee meeting and one field tour opportunity per year</b>
<b>Description of target</b>	Annually, Canfor Alberta will make available to the Forest Management Advisory Committee a minimum of one educational opportunity and one field tour.

#### **Basis for the Target**

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 FMAC that in turn contributes to a more knowledgeable and effective committee. 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 SFMP acceptable to the majority of public. A few of the many examples of educational opportunities would include guest presentations on a particular topic, literature on specific Sustainable Forest Management targets, handouts, FMPs, and/or local associations updates/briefing (e.g. Canadian Boreal Forest Agreement, Mighty Peace Watershed Alliance).

## Means of Achieving Objective & Target (Strategies)

Canfor Alberta will provide informational/educational/capacity building opportunities for FMAC members at each regularly held meeting. In addition, Canfor Alberta will offer one field tour annually.

### Current Status

Canfor provided three opportunities for information/training/capacity development in the 2016 timber year to the Forest Management Advisory Committee (FMAC). At the fall FMAC meeting, Dr. Uldis Silins and Dr. Axel Anderson presented information on two watershed and sedimentation research projects that Canfor is supporting. At the spring FMAC meeting, Canfor shared the Lessons from Nature videos that were developed as part of the fRI Research Healthy Landscapes program of which Canfor is also a supporter.



**FMAC Field Tour**

The FMAC also participated in a field tour in 2016 in which 10 members and 8 advisors visited one of Canfor's active planting operations and also received a tour of the Mountain Pine Beetle Rehabilitation Trial from Derek Sidders and Tim Keddy with the Canadian Wood Fibre Centre and Canadian Forest Service.

### Forecast

Increased public knowledge in forest planning and operations that is open, inclusive, and responsive to public concerns, and grounded in science.

### Legal Requirements

*None*

### Monitoring & Measurement

#### Annual:

Report in the APMR the number of educational opportunities and field tours presented to the FMAC as recorded in the FMAC meeting minutes.

### Acceptable Variance

A minimum of 1 educational opportunity and field tour provided per year

### Response

Adjust activities.



### **6.1.3a Sustainable Forest Management Monitoring Report**

<b>Criterion 6.</b> Society's Responsibility	<b>Element 6.1:</b> Fair and Effective Decision-Making
<b>Value</b>	Public participation and awareness
<b>Objective</b>	Promoting and providing an effective public participation and awareness process
<b>CSA Core Indicator</b>	6.1.3 Availability of summary information on issues of concern to the public
<b>Indicator Statement</b>	<b>CSA Z809-16 Sustainable Forest Management Plan monitoring report made available to the public annually (AFMPS VOIT 6.2.1.1)</b>
<b>Description of indicator</b>	Annually, Canfor Alberta prepares an Annual Performance Monitoring Report that is available to the public.
<b>Target</b>	<b>CSA Z809-16 Sustainable Forest Management Plan and Annual Performance Monitoring report made available to public annually on Canfor's external website</b>
<b>Description of target</b>	Topical information will be provided to the local public as well as a worldwide audience.

#### **Basis for the Target**

This target recognizes the importance of keeping members of the public informed about forestry strategies being developed and planning occurring in the DFA. Annual reporting of the SFMP's performance measures to the advisory group and to the broader public provides an open and transparent means of demonstrating how forests are being managed. The target is a measure of performance to the indicators and targets in this SFMP and is an avenue to review their effectiveness.

#### **Means of Achieving Objective & Target (Strategies)**

Canfor Corporation maintains a website [www.canfor.com](http://www.canfor.com) that makes the SFMP APMR publicly available.

#### **Current Status**

Canfor Alberta's 2016 APMR has been updated on Canfor's external website. All APMRs developed since are on the website.

## **Forecast**

Public awareness and understanding of the SFMP and annual performance relative to the Plan's targets.

## **Legal Requirements**

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 6.2.1.1*

## **Monitoring & Measurement**

### **Annual:**

Canfor Alberta's APMR and SFMP will be made publically available on Canfor's external website. Non-conformance to this indicator will be reported in Canfor's Incident Tracking System (ITS) and the APMR.

## **Acceptable Variance**

No variance

## **Response**

Make the report available.

### **6.1.3b) Public Inquiries**

<b>Criterion 6.</b> Society’s Responsibility	<b>Element 6.1:</b> Fair and Effective Decision-Making
<b>Value</b>	Public participation and awareness
<b>Objective</b>	Promoting and providing an effective public participation and awareness process
<b>CSA Core Indicator</b>	6.1.3 Availability of summary information on issues of concern to the public
<b>Indicator Statement</b>	<b>Percentage of public inquiries that receive an initial contact</b> (No AFMPS VOIT)
<b>Description of indicator</b>	Responding to public inquires demonstrates Canfor Alberta’s commitment to be responsive to the public.
<b>Target</b>	<b>100% of all inquiries receive initial contact within 1 month of receipt</b>
<b>Description of target</b>	Timely response to any public inquiry is important.

#### **Basis for the Target**

Canfor’s corporate policies and certification strategy clearly demonstrate a commitment to communicate with the public. The target assists in fulfillment of commitments made in the *Public Involvement Program* (Canfor, 2013) to record and action public inquiries. It is important to Canfor Alberta that members of the public have opportunities to provide input and comments which are followed up on.

#### **Means of Achieving Objective & Target (Strategies)**

Pubic inquiries are generally received via telephone, email, letters and occasionally via fax or in person. Whatever the method of the inquiry, it is important that Canfor Alberta deals with it adequately and in a timely manner.

In some cases, a public inquiry may require significant time to complete research, investigations and planning of actions to adequately deal with the inquiry. To ensure the public member knows the inquiry is being addressed, Canfor Alberta will, within 1 month, undertake initial contact by acknowledging an inquiry has been received and informing the inquirer that it is in the process of either addressing the inquiry or has developed plans to deal with the inquiry.

#### **Current Status**

During the 2016 timber year, Canfor Alberta received two public inquiries, of which both received an initial response within one month of receipt.

## **Forecast**

Canfor's commitment to be responsive to public inquiries will be maintained.

## **Legal Requirements**

*Alberta Forest Management Planning Standard, Annex 4-Performance Standards*

## **Monitoring & Measurement**

### **Annual:**

As per Canfor's Forest Management System (FMS), all public inquiries are recorded in Creating Opportunities for Public Involvement (COPI) System or Incident Tracking System (ITS), depending on their subject. These systems are utilized to record mandatory information including the date of inquiry, issue source, contact person and the Canfor Alberta employee responsible for dealing with the issue. Action plans and progress in completing action plans are also tracked.

COPI and ITS will be reviewed annually and conformance to the indicator will be reported in the APMR.

## **Acceptable Variance**

90% of public inquiries will generate a response within 1 month.

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **6.2.1 Maintain a Certificate of Recognition**

<b>Criterion 6.</b> Society's Responsibility	<b>Element 6.2:</b> Safety
<b>Value</b>	Safe working environment
<b>Objective</b>	Promoting and providing safe working conditions for employees and contractors
<b>CSA Core Indicator</b>	6.2.1 Evidence of co-operation with Defined Forest Area-related workers to improve and enhance safety standards, procedures, and outcomes in all Defined Forest Area-related workplaces and affected communities
<b>Indicator Statement</b>	<b>Implementation and maintenance of a certified safety program (No AFMPS VOIT)</b>
<b>Description of indicator</b>	Canfor Forest Management Group, Alberta's safety program is certified through the Partnerships In Injury Reduction program.
<b>Target</b>	<b>100% of Canfor FMG Alberta and eligible Defined Forest Area-related contractors will obtain and maintain a Certificate of Recognition or equivalent</b>
<b>Description of target</b>	Certificate of Recognition indicates that an employer has implemented a health and safety program that meets the standards established by their Certifying Partner and Employment and Immigration Partnerships Program.

#### **Basis for the Target**

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 in the Canfor Alberta Region.

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; and
- 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; and
- 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; and
- Eliminate all accidents by working together to identify any potential hazards in the workplace and to take the appropriate corrective action.

**Means of Achieving Objective & Target (Strategies)**

The Partnerships in Injury Reduction (PIR) program encourages the development of effective workplace health, safety and disability management programs in Alberta. PIR has 13 certifying partners; a Certifying Partner is responsible for assessing the quality of health and safety management systems in Alberta. Companies entering the PIR program work towards attaining a Certificate of Recognition (CoR). A CoR indicates that an employer has implemented a health and safety program that meets the standards established by their Certifying Partner and Employment and Immigration Partnerships Program. Once a CoR has been issued, it is valid for a three-year period as long as all maintenance requirements are met. The employer is responsible for completing internal audits for each of the next two years. When the CoR expires after three years, another external audit must be conducted to renew the CoR.

Canfor FMG Alberta has committed that the company and eligible DFA-related contractors will implement and maintain a PIR safety program and achieve a CoR.

**Current Status**

Records from the 2016 timber year show that Canfor FMG Alberta and most of the DFA-related contractors (35 of 36, 97%) maintained a Certificate of Recognition (CoR) or equivalent.

Five contractors are currently in the progress to receiving CoR certification. The one contractor that does not have CoR certification is no longer employed by CANFOR as a result of the CoR certification requirements not being met.

**Forecast**

To create the safest possible working environment for all forest workers and continuously improve safety record.

**Legal Requirements**

*None*

## **Monitoring & Measurement**

### **Annual:**

The indicator will be considered met for Canfor FMG Alberta if they are able to successfully maintain a CoR during the reporting year. The indicator will be considered met for DFA-related contractors if they maintain a CoR or equivalent during the term of their contract with Canfor FMG Alberta within the reporting year. It does not include contracts that are non-forestry, field related. Conformance to the indicator will be reported in the APMR annually.

## **Acceptable Variance**

90% of Canfor FMG Alberta and eligible DFA-related contractors will have CoR or equivalent

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### **6.2.2 Partnerships in Injury Reduction Implemented, Reviewed, and Improved**

<b>Criterion 6. Society's Responsibility</b>	<b>Element 6.2: Safety</b>
<b>Value</b>	Safe working environment
<b>Objective</b>	Promoting and providing safe working conditions for employees and contractors
<b>CSA Core Indicator</b>	6.2.2 Evidence that a worker safety program has been implemented and is periodically reviewed and improved
<b>Indicator Statement</b>	<b>Implementation and maintenance of certified safety program (No AFMPS VOIT)</b>
<b>Description of indicator</b>	Canfor Alberta's safety program is certified through Partnerships In Injury Reduction (PIR).
<b>Target</b>	<b>100% of recommendations from Partnerships in Injury Reduction audit will be addressed and action plans developed</b>
<b>Description of target</b>	A Partnerships in Injury Reduction audit reviews the basic elements of the Company's health and safety program using a PIR approved audit instrument.

#### **Basis for the Target**

The PIR audit is a comprehensive review of the health and safety program; therefore, it is critical Canfor Alberta addresses recommendations brought forward. The annual Occupational Health and Safety program management review is an opportunity to continuously improve the Canfor FMG safety program.

#### **Means of Achieving Objective & Target (Strategies)**

The previous indicator 6.2.1 talks about obtaining and maintaining a CoR. CoR certification is valid for 3 years; an internal audit is conducted each year for 2 years and an external audit is required on the 3<sup>rd</sup> year to renew the CoR. The audits can be used as a tool to assess the effectiveness of the health and safety program against an established standard and ensure it is constantly being reviewed and improved. Recommendations are generated from the audits and the company addresses and creates action plans based on these recommendations and recorded in Canfor's Safety Pages.

Annually, there is a Forest Management Group (FMG) Occupational Health and Safety Program Management Review to evaluate trends toward or away from a continuously improving safety culture. Management Reviews look backward at progress to date, and look forward to anticipate the need for changes to the FMG Occupational Health and Safety program. Management Reviews also evaluate the effectiveness of the program and compares actual



results with the original objectives and targets to determine where further improvement is needed.

### **Current Status**

A PIR audit was conducted in November 2016 that evaluated Canfor Alberta FMG and Mill safety performance. 13 Elements were audited and scored individually in which the overall score was 89%. No elements were found to be non-compliant with the requirements and Canfor Alberta operations received many best practices notations. A total of 7 suggestions for improvement and worksite observations were made of which none were related to FMG practices. Action plans have been put in place to address those findings.

### **Forecast**

Continuous improvement and enhancement of Canfor Alberta's health and safety program

### **Legal Requirements**

None.

### **Monitoring & Measurement**

#### **Annual:**

Report the percentage of audit recommendations addressed in the APMR.

### **Acceptable Variance**

No variance

### **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

### 7.1.1 Indigenous Awareness Training for Canfor Alberta

<b>Criterion 7. Indigenous Relations</b>	<b>Element 7.1: Indigenous and Treaty Rights</b>
<b>Value</b>	Indigenous and treaty rights
<b>Objective</b>	Indigenous and treaty rights will be understood and respected
<b>CSA Core Indicator</b>	7.1.1 Evidence of a good understanding of the nature of Indigenous title and rights
<b>Indicator Statement</b>	<b>Canfor FMG Alberta employees will receive Indigenous awareness training (No AFMPS VOIT)</b>
<b>Description of indicator</b>	Canfor Alberta invests in cultural awareness and skill development by ensuring that employees receive Indigenous awareness training.
<b>Target</b>	<b>100% of Canfor FMG Alberta Forestry Supervisors, Coordinators, Superintendents, and the Operations Manager will receive credible and effective Indigenous awareness training once every 2 years</b>
<b>Description of target</b>	It is important Canfor Alberta employees are provided credible, effective, and knowledgeable Indigenous awareness training, this target will record the type and date of training.

#### **Basis for the Target**

As forest managers, Canfor Alberta employees need to consider and respect all of the major values of the forest and impacts to its stakeholders when creating plans and operating on the landbase. Effective forest management requires employees to be sufficiently educated in values and stakeholder interests, particularly those of the local Indigenous people. To achieve a better understanding of the local Indigenous values, titles, rights and how to communicate effectively with them, Canfor Alberta recognizes that employees require credible and effective Indigenous awareness training.

#### **Means of Achieving Objective & Target (Strategies)**

There are 5 Indigenous groups that have interest in Canfor Alberta’s Forest Management Area: Sturgeon Lake First Nation, Horse Lake First Nation, Sucker Creek First Nation, Aseniwuche Winewak First Nation of Canada and East Prairie Metis. Canfor Alberta will consult with these Indigenous groups to determine whom they recommend to deliver credible and effective training and a list of suggested key topics in order to ensure that Indigenous values, titles, and rights are understood.

Training will be offered for all Canfor Alberta staff once every xx years to ensure continuing education.

### **Current Status**

In September 2015 and 2016, 8 Canfor FMG Alberta staff attended a 3 day cultural camp hosted by Aseniwuche Winewak Nation. The cultural camp provided a great opportunity for staff to receive credible and effective Indigenous awareness knowledge. Although this only represents 50% of Canfor FMG Alberta staff, Canfor has contacted several of the other local Indigenous communities to schedule Indigenous awareness training for all staff.

### **Forecast**

Relationships between Canfor FMG Alberta employees and local Indigenous people will be enhanced with the implementation and coordination of effective Indigenous awareness training. Increased knowledge about the local Indigenous culture, titles, and rights will give employees a better understanding and respect for these values in the planning process and during operations.

### **Legal Requirements**

*None*

### **Monitoring & Measurement**

#### **Annual:**

Canfor's Eclipse training tracking database will keep records of all staff training. Report annually the percent of Canfor FMG Alberta staff that have received credible and effective training over the 2 year period in the APMR.

### **Acceptable Variance**

A minimum of 75% of Canfor FMG Alberta Forestry Supervisors, Coordinators, Superintendents and the Operations Manager will receive a minimum of one credible and effective Indigenous training session every 2 years.

### **Response**

Ensure prompt completion of outstanding training.

### **7.1.2a Forest Management Plan Communicated to Indigenous Groups**

<b>Criterion 7. Indigenous Relations</b>	<b>Element 7.1: Indigenous and Treaty Rights</b>
<b>Value</b>	Indigenous and treaty rights
<b>Objective</b>	Indigenous and treaty rights will be understood and respected
<b>CSA Core Indicator</b>	7.1.2 Evidence of ongoing open and respectful communications with Indigenous Communities to foster meaningful engagement, and consideration of the information gained about their Indigenous title and rights through this process. Where there is communicated disagreement regarding the organization’s forest management activities, this evidence would include documentation of efforts towards conflict resolution
<b>Indicator Statement</b>	<b>Members of local Indigenous communities will be provided ample opportunity to understand Canfor Alberta’s Forest Management Plan (AFMPS VOIT 6.1.1.1)</b>
<b>Description of indicator</b>	To ensure that members of local Indigenous communities and their representatives will be provided information, in a variety of forms, to enable clear understanding of the Forest Management Plan
<b>Target</b>	<b>Opportunity to communicate key components of the Forest Management Plan have been communicated to each affected local Indigenous group</b>
<b>Description of target</b>	The Forest Management Plan will be communicated to Indigenous groups through direct consultation and participation in the Forest Management Advisory Committee.

#### **Basis for the Target**

Canfor Alberta recognizes the importance of having an effective communication plan in place to allow Indigenous people to have a clear understanding of higher-level plans. As outlined in the *Government of Alberta's Guidelines on Consultation with First Nations on Land and Natural Resource Management* (GoA, 2014), Canfor Alberta will communicate with Indigenous groups to review planned forest operations regarding forest management activities that have the potential to adversely impact Indigenous group’s rights and traditional uses of Alberta Crown lands. The guidelines state that FMPs must be communicated with Indigenous groups identified as having some interest in the DFA.

The *Alberta Forest Management Planning Standard*, also details GoA's requirements for the successful development of a FMP. Within these standards, there is a requirement for meaningful communication with Indigenous forest users. Meaningful consultation is defined as "Consulting in good faith, with honest communication and an open exchange of relevant information before making decisions" (GoA, 2006).

Through the implementation of these guidelines and standards, Canfor Alberta will be able to ensure the successful communication of key components of the Forest Management Plan to Indigenous groups.

### **Means of Achieving Objective & Target (Strategies)**

A description of Canfor Alberta's intent to ensure successful communication of the FMP to Indigenous groups is outlined in Canfor's *Terms of Reference 2012 Forest Management Plan for Canfor Forest Management Agreement area 9900037* (Canfor, 2012b).

Canfor Alberta makes provision for Indigenous community input using processes that are in conformance with the *Government of Alberta's Guidelines on Consultation with First Nations on Land and Natural Resource Management* (GoA, 2014).

Indigenous involvement is ensured in 2 ways:

- Indigenous groups, including Sturgeon Lake First Nation, Sucker Creek First Nation, and Métis nation Zone 6, are members of the FMAC; and
- Via direct consultation with Sturgeon Lake First Nation, Horse Lake First Nation, and the Aseniwuche Winewak First Nation of Canada to ascertain their desired level of involvement."

Through participation in Canfor Alberta's FMAC members are directly involved in the development of the VOITs that form the basis of the SFMP as well as the mandatory values, objectives, indicators and targets identified by AESRD in Annex 4 of the *Alberta Forest Management Planning Standard* (GoA, 2006).

Canfor Alberta will also directly contact each of the Indigenous groups to determine how they would like to be involved in the development of the Forest Management Plan and engage in consultation as per the *Government of Alberta's Guidelines on Consultation with First Nations on Land and Natural Resource Management* and the *Government of Alberta's Proponent Guide to First Nations Consultation Procedures for Land Dispositions* (GoA, 2016).

### **Current Status**

Canfor initiated development of its Forest Management Plan (FMP) in 2010. The plan was submitted to the Government of Alberta (GoA) on May 1, 2015 for review and approval. Throughout the FMP development, Canfor contacted four Indigenous groups (Aseniwuche Winewak Nation, Horse Lake First Nation, Sucker Creek First Nation and Sturgeon Lake Cree Nation) identified as having some interest in the DFA.

Canfor provided opportunities for participation with the FMAC in the development of VOITs that were in the FMP, opportunities to attend Open Houses, and made presentations and held meetings with each Indigenous group to provide information on the FMP.

As Canfor began selection of the Preferred Forest Management Scenario (PFMS), Canfor contacted each of the Indigenous groups to present the PFMS and discuss the management assumptions that were used in the development of the scenario.

*Canfor's 2015 Forest Management Plan* was approved by the Province on April 18, 2016.

## **Forecast**

Through the implementation of clear and effective communication of the FMP, Canfor Alberta can ensure an increased knowledge of the Forest Management Plan by the Indigenous communities. In turn, this will lead to a better understanding of both party's interest in the Defined Forest Area and will assist in the approval of the FMP.

## **Legal Requirements**

*Government of Alberta's Guidelines on Consultation with First Nations on Land and Natural Resource Management;*

*Government of Alberta's Proponent Guide to First Nations Consultation Procedures for Land Dispositions; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 6.1.1.1*

## **Monitoring & Measurement**

### **Periodic:**

During the development of a FMP, each opportunity offered and materials/presentations given to each of the Indigenous communities will be entered into Canfor's Creating Opportunities for Public Involvement (COPI) tracking system and reported in the GoA's Record of Consultation. A report from COPI describing these opportunities will be summarized and reported in the APMR. Records of attendance at FMAC meetings will also be maintained in addition to the COPI summary.

## **Acceptable Variance**

No variance

## **Response**

Adjust activities.

### 7.1.2b Communications with Indigenous Communities

<b>Criterion 7. Indigenous Relations</b>	<b>Element 7.1: Indigenous and Treaty Rights</b>
<b>Value</b>	Indigenous and treaty rights
<b>Objective</b>	Indigenous and treaty rights will be understood and respected
<b>CSA Core Indicator</b>	7.1.2 Evidence of ongoing open and respectful communications with Indigenous communities to foster meaningful engagement, and consideration of the information gained about their Indigenous title and rights through this process. Where there is communicated disagreement regarding the organization’s forest management activities, this evidence would include documentation of efforts towards conflict resolution
<b>Indicator Statement</b>	<b>Open and respectful communications with local Indigenous communities to foster relationship building (No AFMPS VOIT)</b>
<b>Description of indicator</b>	Developing and maintaining open and respectful communications with local Indigenous communities will build relationships that will lead to informed and meaningful decisions during forest management planning
<b>Target</b>	<b>Maintain evidence of open and respectful communications with local Indigenous communities to foster relationship building. Where there is communicated disagreement regarding the organization’s forest management activities, evidence of efforts towards conflict resolution are documented</b>
<b>Description of target</b>	Communicate with local Indigenous communities beyond legislated consultation in order to foster relationship building

#### **Basis for the Target**

Regular and open communications with local Indigenous communities will foster meaningful engagement and consideration of the information gained about their Indigenous rights and title in the forest management planning process. These relationships will lead to more informed decisions that will respect Indigenous values, rights and title.

## **Means of Achieving Objective & Target (Strategies)**

Participating in meetings and community events with local Indigenous communities beyond legislated consultation. All communicated disagreements regarding the organization's forest management activities will be recorded in COPI with evidence of efforts towards conflict resolution.

## **Current Status**

Canfor recognizes the importance of building relationships with the local Indigenous communities outside of legislated consultation requirements.

## **Forecast**

Meaningful engagement and consideration of information gained about Indigenous rights and title will be considered in the forest management planning process.

## **Legal Requirements**

*None*

## **Monitoring & Measurement**

### **Annual:**

Annually, report the total number of communications with local Indigenous communities beyond the legislated consultation requirements in the APMR. Annually, report all communicated disagreements regarding the organization's forest management activities and evidence of efforts towards conflict resolution.

## **Acceptable Variance**

No variance

## **Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.



### **7.2.1a Indigenous Opportunities in the Forest Economy**

<b>Criterion 7:</b> Indigenous Relations	<b>Element 7.2:</b> Respect for Indigenous Forest Values, Knowledge, and Uses
<b>Value</b>	Indigenous and treaty rights
<b>Objective</b>	Indigenous and treaty rights will be understood and respected
<b>CSA Core Indicator</b>	7.2.1 Evidence of efforts to promote capacity development and meaningful participation for Indigenous individuals, communities and forest-based companies
<b>Indicator Statement</b>	<b>Opportunities for Indigenous communities and contractors to participate in the forest economy (No AFMPS VOIT)</b>
<b>Description of indicator</b>	Canfor Alberta will offer opportunities for local Indigenous communities and contractors to participate in the forest economy
<b>Target</b>	<b>Maintain evidence that opportunities have been provided</b>
<b>Description of target</b>	The number of opportunities will be tracked in Canfor’s Creating Opportunities for Public Involvement system and reported annually

#### **Basis for the Target**

It is evident that more and more people believe that development of natural resources in their local area should accrue benefits for local communities. These include benefits for local Indigenous communities and may include economic opportunities such as employment, contracts, or a provision of services.

#### **Means of Achieving Objective & Target (Strategies)**

Employment opportunities provided by Canfor Alberta in woodlands operations is predominately through contractual arrangements with qualified service providers. Canfor Alberta will offer employment opportunities to local Indigenous contractors providing they:

- Have the appropriate level of skill and knowledge;
- Have the required equipment;
- Meet applicable legal requirements, including Occupational Health and Safety requirements;
- Have the ability to meet and maintain the Company’s health, safety, and environmental performance requirements;

- Have the ability to meet and maintain the Company's quality and production requirements;
- Deliver services at competitive prices; and
- Provide the required overall service.

## Current Status

No new open bid projects or services that are not secured under existing multi-year agreements were made available for tender in 2016.

During consultation discussions, Canfor verbally relays that the company is actively hiring as an employer in a multitude of positions. Contact information is provided to Indigenous communities with respect to the current application process.

Canfor continues to aid in funding of Indigenous economic opportunities through projects or events such as;

- the Foothills Landscape Management Forum (FLMF) as funding partner for the Caribou Patrol Program in which members of a local Indigenous Community are hired to:
  - Reduce the potential of vehicle collisions with woodland caribou;
  - Enhanced awareness of caribou management through education and outreach initiatives for three specific user groups, the public, industry and students; and
  - Collect data on wildlife sightings; and
  - Participation in a culture camp where employees of Canfor partake in a 3 day event hosted by a local Indigenous Community in which they educate participants on their traditional values and way of life.

## Forecast

Provide fair and equal opportunities for local Indigenous communities and contractors to benefit from the local forest industry as well as to develop a mutually beneficial working relationship between Canfor Alberta and local Indigenous people.

## Legal Requirements

*None*

## Monitoring & Measurement

### Annual:

All opportunities offered to Indigenous people for participation in the forest economy will be recorded in Canfor's COPI tracking system. An annual report from COPI will summarize the number of opportunities offered and reported in the APMR. Annually report evidence of opportunities offered.

## Acceptable Variance

No variance

## Response

Will continue to offer opportunities as they arise.

### **7.2.1b Educational Opportunity to Indigenous**

<b>Criterion 7. Indigenous Relations</b>	<b>Element 7.2: Respect for Indigenous Forest Values, Knowledge and Uses</b>
<b>Value</b>	Indigenous and treaty rights
<b>Objective</b>	Indigenous and treaty rights will be understood and respected
<b>CSA Core Indicator</b>	7.2.1 Evidence of efforts to promote capacity development and meaningful participation for Indigenous individuals, communities, and forest-based companies
<b>Indicator Statement</b>	<b>Number of opportunities for information/training/capacity development that are delivered to the Indigenous communities annually (AFMPS VOIT 6.2.1.1)</b>
<b>Description of indicator</b>	Providing educational opportunities to the Indigenous communities provides knowledge for better dialogue and ultimately better decisions.
<b>Target</b>	<b>A minimum of 1 Indigenous information/training/capacity development opportunity per year</b>
<b>Description of target</b>	Canfor Alberta will provide a minimum of 1 information/training/capacity development opportunity for Indigenous communities, annually.

#### **Basis for the Target**

Open, respectful communication with local Indigenous communities includes not only the company understanding the Indigenous rights and interests but for Indigenous people to understand the company's forest management plans and processes.

#### **Means of Achieving Objective & Target (Strategies)**

Canfor Alberta will offer a minimum of one information/training/capacity development opportunity per year to the Indigenous communities.

This indicator and target recognizes the importance of providing informational or training opportunities for the Indigenous communities that in turn contributes to a more knowledgeable and effective relationship. A few of the many examples of educational opportunities would include guest presentations on a particular topic, literature on specific Sustainable Forest Management targets, handouts, Forest Management Plans, field tours, local associations updates/briefing.

## **Current Status**

Canfor provided two opportunities for information/training/capacity development in the 2016 timber year:

- Two members of the Sucker Creek First Nation and one member from the Aseniwuche Winewak Nation attended a FMAC meeting in which presentations were made about watershed management strategies and sedimentation in relation to water quality.
- Two members of the Sucker Creek First Nation and 2 members of Horse Lake First Nation attended Canfor's FMAC tour which included a tour of planting operations and the MPB Rehabilitation Trial.

## **Forecast**

Increased knowledge in forest planning and operations that is open, inclusive, responsive to Indigenous concerns, and grounded in science.

## **Legal Requirements**

*None*

## **Monitoring & Measurement**

### **Annual:**

All opportunities offered as it relates to information/training/capacity development will be recorded in Canfor's COPI database and reported in the APMR.

## **Acceptable Variance**

No variance

## **Response**

Adjust activities.

## **7.2.2 Indigenous Sites, Forest Values, and Traditional Knowledge**

<b>Criterion 7: Indigenous Relations</b>	<b>Element 7.2:</b> Respect for Indigenous Forest Values, Knowledge, and Uses
<b>Values</b>	Indigenous and treaty rights
<b>Objectives</b>	Indigenous and treaty rights will be understood and respected
<b>CSA Core Indicators</b>	7.2.2 Evidence of understanding and use of Indigenous knowledge through the engagement of willing Indigenous communities, using a process that identifies and manages culturally important resources and values
<b>Indicator Statement</b>	<b>Percent of identified historic, sacred and culturally important sites, forest values, traditional knowledge and uses considered in forest planning processes (AFMPS VOIT 6.1.1.1)</b>
<b>Description of indicator</b>	In order to maintain historic, sacred and culturally important sites, forest values, traditional knowledge and uses these must be identified through communication or existing knowledge and evaluated to determine a range of options available for their protection.
<b>Target</b>	<b>100% of historic, sacred and culturally important sites, forest values, traditional knowledge and uses known or identified through communication are considered in forest planning processes</b>
<b>Description of target</b>	All historic, sacred and culturally important sites, forest values, traditional knowledge and uses that are identified by local Indigenous people during the communication process or through existing knowledge will be protected.

### **Basis for the Target**

In order to ensure that Indigenous values are addressed in forest operations and plans, forest planners need to initiate a communication process with the affected Indigenous groups. The Alberta government developed the *Government of Alberta's Policy on Consultation with First Nations on Land and Natural Resource Management* (GoA, 2013) and the *Government of Alberta's Policy on Consultation with Metis Settlements on Land and Natural Resource Management* (GoA, 2015) to help standardize these procedures. From this policy, the

*Government of Alberta's Guidelines on Consultation with First Nations on Land and Natural Resource Management (GoA, 2014)* and the *Government of Alberta's Guidelines on Consultation with Metis Settlements on Land and Natural Resource Management (GoA, 2016)* were created. These guidelines form the basis to which Canfor Alberta communicates with Indigenous groups to address Indigenous sacred and culturally important sites, forest values, traditional knowledge and uses in forestry planning. In addition to the guidelines, GoA has also developed a more detailed summary for Indigenous communication as it relates to forestry and outlines Alberta's expectations in the *Government of Alberta's Proponent Guide to First Nations and Metis Settlements Consultation Procedures (GoA, 2016)*.

### **Means of Achieving Objective & Target (Strategies)**

Through effective communication with the Indigenous groups during the planning process, Canfor Alberta will be able to address any identified issues, recommendations, and values that may be of concern.

### **Current Status**

All records and action plans from May 1, 2016 to April 30, 2017, in Canfor's Creating Opportunities for Public Involvement (COPI) database were reviewed and it was determined that 100% of Indigenous historic, sacred, and culturally important sites, forest values, traditional knowledge, and uses were considered in forest planning process.

### **Forecast**

Through consideration of the historic, sacred and culturally important sites, forest values, traditional knowledge and uses identified by Indigenous people, Canfor Alberta is ensuring that such sites are being maintained across the landscape.

### **Legal Requirements**

*The Government of Alberta's Policy on Consultation with First Nations on Land and Natural Resource Management, 2013;*

*Government of Alberta's Policy on Consultation with Metis Settlements on Land and Natural Resource Management, 2015*

*Government of Alberta's Guidelines on Consultation with First Nations on Land and Natural Resource Management, 2014;*

*Government of Alberta's Guidelines on Consultation with Metis Settlements on Land and Natural Resource Management. 2016;*

*Government of Alberta's Proponent Guide to First Nations and Metis Settlements Consultation Procedures, 2016; and*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 6.1.1.1*

## **Monitoring & Measurement**

### **Annual:**

Canfor Alberta uses a database called Creating Opportunities for Public Involvement to keep record of all attempts to consult, items discussed, actions, and follow-up. The details that are entered into Creating Opportunities for Public Involvement will be in accordance with the *Government of Alberta's Proponent Guide to First Nations and Metis Settlements Consultation Procedures* (GoA, 2016). The follow-up and completion of the action items identified during consultation will ensure that all identified Indigenous sacred and culturally important sites, forest values, traditional knowledge, and uses are considered in forest planning. All sites that are identified during communications will be entered into Canfor's Area of Concern GIS layer to ensure that they are considered in the forest planning process.

Annually, COPI and the Area of Concern GIS layer will be reviewed to ensure that all historic, sacred, and culturally important sites, forest values, traditional knowledge and uses were considered in the forest planning process. Adherence to the target will be reported in the APMR.

### **Acceptable Variance**

No variance

### **Response**

Adjust activities.

### **7.2.3 Conformance with Plans to Address Indigenous Values**

<b>Criterion 7. Indigenous Relations</b>	<b>Element 7.2: Respect for Indigenous Forest Values, Knowledge, and Uses</b>
<b>Value</b>	Indigenous and treaty rights
<b>Objective</b>	Indigenous and treaty rights will be understood and respected
<b>CSA Core Indicator</b>	7.2.3 Level of management and/or protection of areas where culturally important practices and activities occur
<b>Indicator Statement</b>	<b>Percent of forest operations in conformance with operational/site plans developed to address Indigenous forest values, traditional knowledge, and uses (AFMPS VOIT 6.1.1.1)</b>
<b>Description of indicator</b>	It is essential that operational/site plans for forest management activities address any concerns regarding Indigenous forest values, traditional knowledge and uses before the operations commence. This is achieved through the communication process. In addition to addressing identified concerns in the operational/site plans, it is equally important that the plans be implemented at the operational level.
<b>Target</b>	<b>100% of forest operations are conducted in conformance with operational/site plans that have been developed to address Indigenous forest values, traditional knowledge and uses</b>
<b>Description of target</b>	Canfor Alberta is required to verify that operational/site plans are effectively implemented through a series of inspections, audits, and reporting/monitoring procedures. Conformance to applicable policies and reporting/monitoring procedures ensures that identified Indigenous forest values, traditional knowledge, and uses are addressed as intended.

#### **Basis for the Target**

In order to ensure that Indigenous values, traditional knowledge, and uses are addressed in forest operations and plans, forest planners need to initiate a communication process with the affected Indigenous groups (Indicator 7.1.2 & 7.2.2).

Operational plans developed should address any Indigenous forest values, traditional knowledge, and uses that may have been identified. It is important that there are systems in



place to ensure that the plans are being followed at the operational level. Canfor Alberta monitors conformance with operational plans through several processes. Therefore ensuring the protection of areas where culturally important practices and activities (hunting, fishing, and gathering) occur.

### **Means of Achieving Objective & Target (Strategies)**

In order to ensure conformance with operational/site plans, Canfor Alberta operations supervisors are required to conduct regular site inspections. In addition to these inspections, operations are audited by internal and external parties on an annual basis. The purpose of these audits is to ensure that operational/site plans are being followed at an operational level and areas of non-conformance are identified. In instances, where it has been determined that an operational/site plan has not been followed, whether through the inspection or auditing process, a record will be entered in Canfor's Incident Tracking System. This database requires that an action plan be put in place to address the non-conformance and develop further preventative measures.

### **Current Status**

Through the consultation process, there were no Indigenous forest values, traditional knowledge and uses identified within operational/site plans in the 2016 timber year. 100% of forest operations were conducted in conformance with operational/site plans that were developed to address previously identified Indigenous forest values, traditional knowledge, and uses.

### **Forecast**

Indigenous forest values, traditional knowledge and use will be respected.

### **Legal Requirements**

*Canfor Timber Harvest Planning and Operating Ground Rules;*

*Alberta Forest Management Planning Standard, Annex 4 – Performance Standards 6.1.1.1;*

*Government of Alberta's Guidelines on Consultation with First Nations on Land and Natural Resource Management, 2014; and*

*Government of Alberta's Guidelines on Consultation with Metis Settlements on Land and Natural Resource Management. 2016.*

### **Monitoring & Measurement**

#### **Annual:**

All communication and actions as it relates to operational/site plans will be recorded in Canfor's COPI database.

In instances, where it has been determined that an operational/site plan has not been followed, whether through the inspection or auditing process, a record will be entered in Canfor's Incident Tracking System (ITS), which will be summarized in the APMR.

### **Acceptable Variance**

No variance

**Response**

If the target is not met, a root cause analysis will be completed to determine cause. Once cause is determined, the process may be modified.

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# **Appendix 1 Canadian Standards Association VOITS**



CCFM Objective	CSA Element	Value	Objective	CSA Core Indicator	Indicator Statement	Target	
<b>1. Biological Diversity</b> Conserve biological diversity by maintaining integrity, function, and diversity of living organisms and the complexes of which they are part, including ecological elements that contribute to cultural values.	<b>1.1 Ecosystem Diversity</b> Conserve ecosystem diversity at the stand and landscape level by maintaining the variety of communities and ecosystems that naturally occur in the Defined Forest Area. Establish forest plantations only in afforestation projects.	natural ecosystems on the landscape	All ecosystems are represented on the landscape at current levels	1.1.1 Ecosystem area by type	Uncommon ecological communities maintained	100% of identified uncommon ecological communities will be maintained	
				1.1.2 Forest area by type or species composition	Percent distribution of forest type (broad conifer, broad leaf, broad mixed) >20 years old across Defined Forest Area	Maintain the current baseline percent distribution of forest types (broad conifer, broad leaf, broad mixed) >20 years old into the future	
				1.1.3 Forest area by seral stage or age class	a) Area of old interior forest by Natural Region by cover class across the Defined Forest Area  No CSA Core Indicator  b) Range of patch sizes by subunit and entire Defined Forest Area	100% of area of old interior forest will be within the 10-year forecast by Natural Region  Patch size distribution will achieve natural patch size distribution levels over the 200-year planning horizon	
				Forest area by seral stage or age class	c) Percent of area of pioneer, young and old forest by Natural Region across the Defined Forest Area	100% of pioneer, young and old forest by Natural Region will meet the Preferred Forest Management Scenario forecast	
				1.1.4 Degree of within-stand structural retention	a) Percent of representative merchantable area of the total annual harvested area retained as structure retention across the Defined Forest Area  b) Area of unsalvaged burned forest  c) Area of unsalvaged blowdown	On a 5-year rolling average, no less than 4% of the area (ha) harvested will be retained as representative merchantable patch and dispersed structure retention across the Defined Forest Area  100% of burned areas that have salvage plans will be implemented in compliance with Government of Alberta directive  In areas with significant blowdown (>10ha), a minimum of 25% of the area will be left unsalvaged	
	<b>1.2 Species Diversity</b> Conserve species diversity by ensuring that habitats and forest conditions for the native species found in the Defined Forest Area are maintained through time, including habitats for known occurrences of species at risk.	Habitat Representation	Habitat for focal species is maintained on the landscape	Habitat for focal species is maintained on the landscape	1.2.1 Degree of habitat protection for selected focal species, including species at risk.	a) Trumpeter Swan habitat maintained  b) Percentage of significant wildlife mineral licks conserved	No future winter harvest within 200 meters and no summer harvest within 800 meters of provincially identified Trumpeter Swan sites  100% of significant wildlife mineral licks will be conserved annually, consistent with Operating Ground Rules
					1.2.2 Degree of suitable habitat in the long-term for selected focal species, including species at risk.	a) Sufficient amount of functional Woodland Caribou habitat over time	Target (1) •No timber harvesting will occur in the Conservation zone identified within the Little Smoky/La Pêche ranges for the period of May 1, 2014-April 30, 2024 •No timber harvesting will occur in the Timber Supply Subunits DS3, DS4 and DS6 within the Little Smoky range for the period May 1, 2014-April 30, 2019 •No timber harvesting will occur in the Timber Supply Subunits DS1, DS2 DS6 and DS7 within the Little Smoky range for the period May 1, 2014-April 30, 2024  Target (2) All future harvested areas, excluding the deciduous broad cover group, in all identified Caribou Management Zones will be reforested to a coniferous stand to reduce alternate prey habitat  Target (3) Canfor Alberta will have zero future contribution to open-route density south of the Deep Valley
						b) Fish risk ranking for Bull Trout and Arctic Grayling	100% of watersheds with a high or very high fish risk ranking and >25% Caribou influence will be assessed using Canfor's Fish Risk Flow Chart and have mitigation strategies scheduled and implemented
						c) Amount of barred owl habitat available for breeding pairs	The amount of the potential barred owl habitat for breeding pairs will not be more than 10% below current levels across the Defined Forest Area

CMA Element	Value	Objective	CMA Core Indicator	Indicator Statement	Target
		Current species diversity is maintained on the landscape	1.2.3 Proportion of regeneration composed of native species (REPEATED as 2.1.2)	d) Density (linear km/km <sup>2</sup> ) of open roads in the Grizzly Bear Range	Density of open roads (linear km/km <sup>2</sup> ) not to exceed 0.75km/km <sup>2</sup> for the Grizzly Bear Range
				Regeneration will be consistent with provincial regulations and standards for seed and vegetative use	100% compliance with the Alberta Forest Genetics Resources Management and Conservation Standards
<b>1.3 Genetic Diversity</b>	Natural genetic diversity	Genetic diversity will be maintained on the landscape	No core indicator in 2503-16		
Conserve genetic diversity by maintaining the variation of genes within species and ensuring that reforestation programs are free of genetically engineered trees.				Regeneration will be consistent with Provincial regulations and standards for seed and vegetative use	100% compliance with the Alberta Forest Genetic Resources Management and Conservation Standards for all seed collection and seedling deployment
<b>1.4 Protected Areas and Sites of Special Biological, Geological, Heritage, or Cultural Significance</b>	Identified protected areas and sites that have special Biological, Geological, Heritage, and Cultural significance	Conservation of the natural states and processes to maintain protected areas and sites that have Biological, Geological, Heritage, and Cultural significance	1.4.1 Protection of sites of special significance.	a) Percent of forest management activities where consultation has occurred for operations near Provincially protected areas	The Province will be consulted 100% of the time when operations will occur within one kilometer of Provincially protected areas
Respect protected areas identified through government processes. Cooperate in broader landscape management related to protected areas and sites of special biological or cultural significance. Identify sites of special biological, geological, heritage or cultural significance within the Defined Forest Area and implement management strategies appropriate to their long-term maintenance.				b) Percent of planned blocks assessed for Geological, Heritage, and Cultural potential	100% of all planned blocks will have Historical Resource Impact Assessments completed to determine Geological, Heritage, and Cultural resource potential
			1.4.2 Proportion of identified sites with implemented management strategies.	a) Percent of forest management activities consistent with management strategies for sites of biological significance	100% of identified biologically significant sites will have implemented management strategies identified in consultation with the Province
				b) Percent of identified Geological, Heritage, and Cultural sites with implemented management strategies	100% of identified Geological, Heritage, and Cultural sites will be protected through implemented management strategies



CCPM Element	CSA Element	Value	Objective	CSA Core Indicator	Indicator Statement	Target	
<b>2. Ecosystem Condition and Productivity</b> Conserve forest ecosystem condition and productivity by maintaining the health, vitality, and rates of biological production.	<b>2.1 Forest Ecosystem Condition and Productivity</b> Conserve forest ecosystem productivity and productive capacity by maintaining ecosystem conditions that are capable of supporting naturally occurring species. Reforest promptly and use tree species ecologically suited to the site.	Healthy forest ecosystem	Meet reforestation targets on all harvested areas	2.1.1 Reforestation success (REPEATED as 4.1.2)	a) Prompt reforestation	100% of all harvested blocks will be reforested within 2 years	
					b) Prompt retreatment of failed areas	All harvested blocks that have not achieved the regeneration targets as per the Regeneration Standard of Alberta established survey standards will have remedial treatments completed within 12 months of the survey date	
					c) Actual regenerated stand yield compared to the yield expectations of the Timber Supply Analysis	The regenerated stand yield (Mean Annual Increment) for the total of all sampling populations will meet or exceed the regenerated stand yield assumptions of the Timber Supply Analysis in the Regeneration Standard+146 of Alberta performance survey process	
				Forest ecosystem health will be maintained	2.1.2 Proportion of regeneration comprised of native species (REPEATED as 1.2.3)	Noxious weed program implementation	100% of noxious weeds identified along Canfor Alberta's dispositions will have treatments scheduled and completed according to the plan
				2.1.3 Additions and deletions to the forest area.(REPEATED as 4.2.1)	Percent of gross forested landbase in the Defined Forest Area converted to non-forest landuse through forest management activities (Same as 4.2.1)	Forest management company activities not to exceed 3% reduction in gross Defined Forest Area over the life of the Forest Management Agreement (May 26, 1964)	
				2.1.4 Proportion of the calculated long-term sustainable harvest level that is actually harvested	Percent of volume harvested compared to long-term approved harvest level	Not to exceed 100% of the approved harvest level (Annual Allowable Cut) over 5 years (5-year quadrant balance)	
<b>3. Soil and Water</b> Conserve soil and water resources by maintaining their quantity and quality in forest ecosystems	<b>3.1 Soil Quality and Quantity</b> Conserve soil resources by maintaining soil quality and quantity	Soil Quality and Quantity	Soil productivity will be maintained or enhanced	3.1.1 Level of soil disturbance	a) Percent of harvested blocks meeting soil disturbance objectives identified in the Operating Ground Rules	100% of harvested blocks will not exceed 5% soil disturbance without government approval as outlined in Canfor Operating Ground Rules	
			Soil erosion will be minimized		b) Percent of soil erosion and slumping incidences with mitigation strategies implemented	100% of known significant erosion and slumping events caused by forest operations will have mitigation strategies implemented within one year of identification	
			Maintain on-site coarse woody debris	3.1.2 Level of downed woody debris	Percentage of harvested area with coarse woody debris equivalent to pre-harvest conditions	100% of the harvested area will meet or exceed coarse woody debris conditions equivalent to the pre-harvest state	
	<b>3.2 Water Quality and Quantity</b> Conserve water resources by maintaining water quality and quantity	Water quantity	Water quantity will be maintained	3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance	Watersheds with high risk level assessments with mitigation strategies implemented	100% of watersheds with a moderate or high risk level will have approved mitigation strategies implemented	
				Water quality will be conserved	3.2.2 Proportion of forest management activities, consistent with prescriptions to protect identified water features	a) Drainage structures with identified water quality concerns that have mitigation strategies implemented	100% of medium and high hazard drainage structures will have mitigation strategies implemented according to the road maintenance plan for permanent Canfor Alberta roads
			Impact to water quality will be minimized			b) Forestry water crossing construction and maintenance work in compliance with Code of Practice for Water Course Crossings or Operating Ground Rules	100% of forestry water crossing construction and maintenance work in compliance with Code of Practice for Water Course Crossings or Operating Ground Rules
					c) Number of non-compliances where forest operations are not consistent with riparian management requirements as identified in operational plans	Zero non-compliances, specific to Operating Ground Rules, with riparian management requirements in forest operations	

CCPM Objective	CSA Element	Value	Objective	CSA Core Indicator	Indicator Statement	Target
<b>4. Role in Global Ecological Cycles</b> Maintain forest conditions and management activities that contribute to the health of global ecological cycles	<b>4.1 Carbon Uptake and Storage</b> Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems	Carbon uptake and storage	Carbon uptake and storage (i.e. carbon balance) will be maintained	4.1.1 Net carbon uptake  4.1.2 Reforestation Success (REPEATED as 2.1.1)	The tonnes of carbon stored in each of the carbon pools  SAME AS 2.1.1	Achieve 100% of the carbon stored in each of the carbon pools as defined by the Preferred Forest Management Scenario forecast
	<b>4.2 Forest Land Conversion</b> Protect forest lands from deforestation. Encourage afforestation, where ecologically appropriate	Sustainable yield of timber	Limit the conversion of productive forest to other uses	4.2.1 Additions and deletions to the forest area (REPEATED as 2.1.3)	SAME AS 2.1.3	
<b>5. Economic and Social Benefits</b> Sustain flows of forest benefits for current and future generations by providing multiple goods and services	<b>5.1 Timber and Non-Timber Benefits</b> Manage the forest sustainably to produce a mix of timber and non-timber benefits. Support a diversity of timber and non-timber forest products and forest-based services	Sustainable yield of timber and non-timber benefits	Sustainable forest management that maintains timber and non-timber benefits	5.1.1 Documentation of the diversity of timber and non-timber resources, including products and services produced in the Defined Forest Area	a) Percent of volume harvested compared to long-term approved harvest level (Same as 2.1.4)  b) Diversity of timber and non-timber resources produced from the Defined Forest Area	Not to exceed 100% of the approved harvest level (Annual Allowable Cut) over 5 years (5-year quadrant balance)  Report on the diversity of timber and non-timber resources produced from the Defined Forest Area annually
					c) Maintenance of recreational areas for non-timber values	Carfor Alberta will maintain a minimum of 3 recreational areas for use by the public within Defined Forest Area
				5.1.2 Evidence of open and respectful communications with forest dependent businesses, forest users and local communities to integrate non-timber resources into forest management planning. When significant disagreement occurs, efforts towards conflict resolution are documented	a) Compliance with trespass notifications as outlined in the Canfor Operating Ground Rules	100% of trespasses will be notified as outlined in the Canfor Operating Ground Rules. Where there is communicated disagreement regarding the organization's forest management activities, evidence of efforts towards conflict resolution are documented
					b) Evidence of open and respectful relationships with forest dependent businesses  c) Communications with local municipalities, communities, and other forest users	Evidence of a minimum of 5 relationships with other forest dependent businesses annually  Evidence of a minimum of 4 communications with local municipalities, communities, and other forest users. Where there is communicated disagreement regarding the organization's forest management activities, evidence of efforts towards conflict resolution are documented
	<b>5.2 Communities and Sustainability</b> Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies	A range of benefits to local communities	Local communities and contractors will have the opportunity to share in benefits such as jobs, contracts and services	5.2.1 Level of participation and support in initiatives that contribute to community sustainability  5.2.2 Level of participation and support in training and skills development	a) Investment in local communities  b) Investment in local communities	Over a rolling 5-year period, a minimum of 75% of Canfor Alberta forest operations dollars paid for contract services will be expended locally  Canfor Alberta will provide financial-kind support to a minimum of 8 community events or services
				Training in environmental and safety procedures in compliance with company baking plans	100% of Canfor FMG Alberta employees and contractors have required environmental and safety training	

CCPM Coverage	CSA Element	Value	Objective	CSA Core Indicator	Indicator Statement	Target
		Fair distribution of benefits across communities	A fair distribution of benefits and costs will be ensured across all communities in the local area	5.2.3 Level of direct and indirect employment	Level of direct and indirect employment	Report annually on the trend of Canfor Alberta's level of direct and indirect jobs created from the Defined Forest Area
<b>6. Society's Responsibility</b> Sustainable forest management includes society's responsibility for worker and community safety, and the requirement for fair, equitable, and effective forest management decisions.	<b>6.1 Fair and Effective Decision-Making</b> Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress	Public participation and awareness	Promoting and providing an effective public participation and awareness process	6.1.1 Level of participant satisfaction with the public participation process  6.1.2 Evidence of efforts to promote capacity development and meaningful participation in general.  6.1.3 Availability of summary information on issues of concern to the public	Public advisory group maintained and satisfaction survey implemented  a) The number of educational opportunities provided to the community b) Number of educational opportunities for information/training/capacity building that are delivered to the public advisory group annually  c) CSA Z809-16 Sustainable Forest Management Plan monitoring report made available to the public annually d) Percentage of public inquiries that receive an initial contact	80% annual satisfaction from surveys in all four targets  A minimum of 5 educational opportunities provided to the community annually Provide one educational opportunity per Forest Management Advisory Committee meeting and one field tour opportunity per year CSA Z809-16 Sustainable Forest Management Plan and Annual Performance Monitoring report made available to public annually on Canfor's external website 100% of all inquiries receive initial contact within 1 month of receipt
	<b>6.2 Safety</b> Demonstrate that the organization is providing and promoting safe working conditions for its employees and contractors.	Safe working environment	Promoting and providing safe working conditions for employees and contractors	6.2.1 Evidence of co-operation with DFA-related workers to improve and enhance safety standards, procedures, and outcomes in all DFA-related workplaces and affected communities.  6.2.2 Evidence that a worker safety program has been implemented and is periodically reviewed and improved.	Implementation and maintenance of a certified safety program  Implementation and maintenance of certified safety program	100% of Canfor FMG Alberta and eligible Defined Forest Area-related contractors will obtain and maintain a Certificate of Recognition or equivalent  100% of recommendations from Partnerships in Injury Reduction audit will be addressed and action plans developed
<b>7. Aboriginal Relations</b> Recognize and respect the unique rights and values of Aboriginal Peoples.	<b>7.1 Aboriginal and Treaty Rights</b> Recognize and respect Aboriginal title and rights, and treaty rights. Understand and comply with current legal requirements related to Aboriginal title and rights, a treaty rights.  <b>7.2 Respect for Aboriginal Forest Values, Knowledge and Uses</b> Respect traditional Aboriginal forest values, knowledge, and uses as identified through an Aboriginal input process.	Indigenous and treaty rights	Indigenous and treaty rights will be understood and respected	7.1.1 Evidence of good understanding of the nature of Aboriginal title and rights.  7.1.2 Evidence of ongoing open and respectful communications with Aboriginal communities to foster meaningful engagement, and consideration of the information gained about their Aboriginal title and rights through this process. Where there is communicated disagreement regarding the organization's forest management activities, this evidence would include documentation of efforts towards conflict resolution.  7.2.1 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal individuals, communities and forest-based companies	Canfor FMG Alberta employees will receive Indigenous awareness training.  a) Members of local Indigenous communities will be provided ample opportunity to understand Canfor Alberta's Forest Management Plan b) Open and respectful communications with local Indigenous communities to foster relationship building  a) Opportunities for indigenous communities and contractors to participate in the forest economy. b) Number of opportunities for information/training/capacity development that are delivered to the Indigenous communities annually	100% of Canfor FMG Alberta Forestry Supervisors, Coordinators, Superintendents, and the Operations Manager will receive credible and effective Indigenous awareness training once every two years  Opportunity to communicate key components of the forest management plan have been communicated to each affected local Indigenous group Maintain evidence of open and respectful communications with local Indigenous communities to foster relationship building. Where there is communicated disagreement regarding the organization's forest management activities, evidence of efforts towards conflict resolution are documented  Maintain evidence that opportunities have been provided A minimum of 1 Indigenous information/training/capacity development opportunity per year

				7.2.2. 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	Percent of identified historic, sacred and culturally important sites, forest values, traditional knowledge and uses considered in forest planning processes	100% of historic, sacred and culturally important sites, forest values, traditional knowledge and uses known or identified through communication are considered in forest planning processes
				7.2.3. Level of management and/or protection of areas where culturally important practices and activities occur	Percent of forest operations in conformance with operational/site plans developed to address indigenous forest values, traditional knowledge and uses	100% of forest operations are conducted in conformance with operational/site plans that have been developed to address indigenous forest values, traditional knowledge and uses

## **Appendix 2 Terms of Reference**



# **CANADIAN FOREST PRODUCTS LTD. ALBERTA OPERATIONS**



**Forest Management Agreement (FMA 9900037)**



**FOREST MANAGEMENT ADVISORY COMMITTEE**

**TERMS OF REFERENCE**

Revised: October 18, 2017





## **INTRODUCTION**

Canfor - Alberta has been working responsibly with the Forest Management Advisory Committee to develop credible, Sustainable Forest Management Plans since September of 1995. Other company planning processes, including those relative to Forest Management Plans, General Development Plans and Annual Operating Plans also provide opportunities for public review and comment.

## **BACKGROUND**

In July of 1999, Canadian Forest Products Ltd. (Canfor) formally announced its commitment to seek sustainable forest management certification of the company's forestry operations under the Canadian Standards Association (CSA) Sustainable Forest Management (SFM) standard.

As a preparatory step to sustainable forest management certification, Canfor developed a Forest Management System (FMS) for the company's woodlands operations. In December 1999, this system was certified to the ISO 14001 standard developed by the International Organization for Standardization. The Company's FMS provides a platform on which to build the sustainable forest management elements required to meet the CSA SFM standard.

The management of Canfor has set out a number of commitments that define the mission, vision, policies and guiding principles for the company. These include Canfor's *Environment Policy, June 2016 and Sustainable Forest Management Commitments, June 2016* (Figure 2 and Figure 3). These commitments have been used to enable and guide the development of the current Sustainable Forest Management Plan (SFMP), and also commit us to the continual improvement of our performance in implementing the plan under the principle of adaptive management.

Canfor's Environment Policy includes a commitment to *"provide opportunities for interested parties to have input into our sustainable forest management planning activities"*. Canfor's Sustainable Forest Management Commitments include a commitment *"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"*.

CSA requires *"extensive public participation in the development of its Standards. In this Standard, the public identifies forest values of specific importance to environmental, social, and economic concerns and needs. Public also takes part in the forest managing process and works with organizations to identify and select SFM objectives, indicators, and targets to ensure that these values are addressed."*

Alberta Forest Management Planning Standard requires public participation. This Standard indicates that Canfor must provide meaningful opportunities for participation in the planning process.

Canfor Alberta's Forest Management Agreement (FMA) area encompasses a small area north and west of Spirit River bordering the Peace River, an area north and east of DeBolt and an area south of Grande Prairie and east of the Smoky River. The main neighboring communities include DeBolt, Valleyview, Spirit River, Grande Cache and Grande Prairie. For certification with CSA, this FMA will serve as the Defined Forest Area (DFA) (Figure 1).

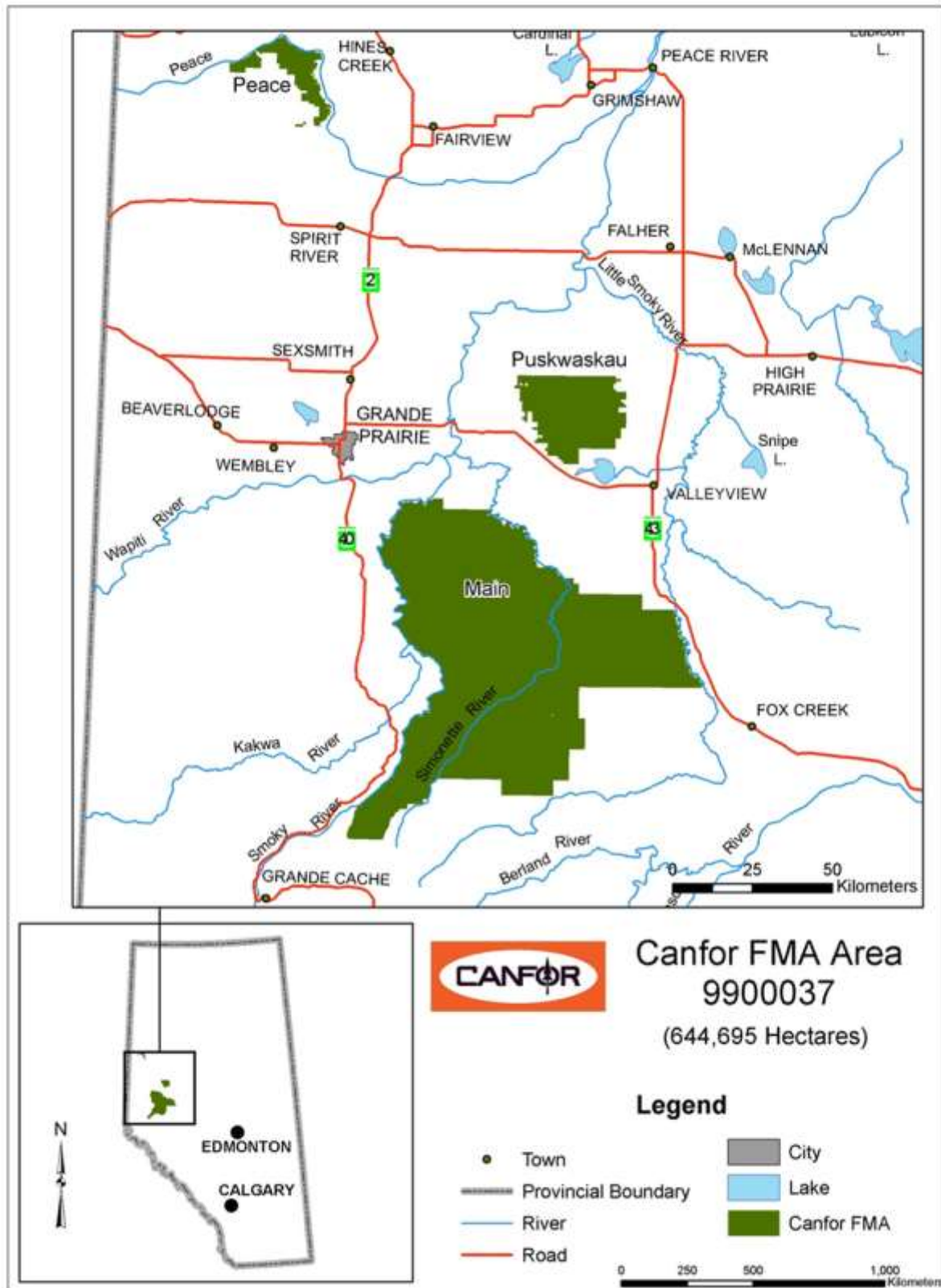


Figure 1: Canfor Defined Forest Area

In 1995, the Forest Management Advisory Committee (FMAC) was initiated to provide public input into preparing a long-term Detailed Forest Management Plan (DFMP). Initially this Committee met monthly to identify key issues and concerns to be addressed.

In December 1999, Canfor and the Forest Management Advisory Committee (FMAC) agreed to work on the development and revision on the Sustainable Forest Management Plan (SFMP) for the Alberta FMA area. The terms of reference was revised and adopted to reflect this additional role.

In 2000, Canfor and the FMAC developed the values, goals, indicators, and objectives for the SFMP, which was submitted for certification.

The Detailed Forest Management Plan (DFMP) (10-yr legal plan with the Alberta Government) that incorporated the 2000 SFMP was approved in November 2003.

From 2003 - 2005 the FMAC worked with Canfor in development of values, objectives, indicators, and targets for a new SFMP based on the new CSA-Z809-02 standard for re-certification in 2005.

In the fall of 2006, Canfor submitted to the Alberta Government the 2005 SFMP to be incorporated as part of the approved Forest Management Plan (FMP).

During 2007 and 2010 the FMAC provided input for the Healthy Pine Strategy DFMP Amendment.

The Healthy Pine Strategy DFMP Amendment was approved by Alberta Government in January 2010.

From 2010 - 2012 the FMAC worked with Canfor in development of values, objectives, indicators, and targets for a new SFMP based on the new CSA-Z809-08 standard for re-certification in 2012. Canfor was audited and received certification to the CSA Z809-08 standard in November 2012.

From 2010-2015 Canfor developed its 2015 Forest Management Plan (FMP) which was submitted to the Alberta Government for approval on May 1, 2015 which received approval on April 19, 2016. The FMAC worked with Canfor in the development and review of the FMP. The values, objectives, indicators, and targets developed in the 2012 SFMP were incorporated into the FMP.

In 2017, Canfor identified gaps in the *Canfor Alberta 2012 Sustainable Forest Management Plan* (2012 SFMP) to the Z809-16 standard. The FMAC expressed interest in continuing to use the VOITs from the 2012 SFMP where consistent with the new standard as they are still very relevant to the monitoring and measuring of SFM performance on the DFA. Where gaps were identified, the FMAC was engaged in developing the additional values, objectives, indicators, and targets.

The SFMP Annual Performance Monitoring Report is supplied to the FMAC annually. Indicators and targets that “Do Not Meet” are reviewed and addressed. Canfor will also bring forward, if

any, recommended changes to indicators and/or targets for acceptance by the FMAC. Once accepted, Canfor then updates the current SFMP to reflect these changes.

Canfor is audited by a third party to maintain CSA certification annually. Canfor takes part in an internal audit process as well.





**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.

JUNE 2016



**DON KAYNE**

President and Chief Executive Officer



**MICHAEL KORENBERG**

Chairman

CANADIAN FOREST PRODUCTS LTD. and affiliated companies

CANFOR.COM

Figure 2: Canfor Environment Policy





## 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.**

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### ACCOUNTABILITY

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

### ADAPTIVE MANAGEMENT

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

### SCIENCE

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

### MULTIPLE VALUE MANAGEMENT

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

### HEALTH AND SAFETY

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

### ABORIGINAL PEOPLES

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



**OPPORTUNITIES FOR PARTICIPATION**

We will provide opportunities for the public, communities, Aboriginal Peoples and other stakeholders and 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.

JUNE 2016



**DON KAYNE**  
President and Chief Executive Officer

Figure 3: Canfor Sustainable Forest Management Commitments



## **A. Defined Goals**

The Forest Management Advisory Committee (FMAC) aims to help ensure that sustainable forest management decisions are made as a result of informed, inclusive, and fair consultation with local people who are directly affected by or have an interest in sustainable forest management. The FMAC consists of members who represent a broad range of interested parties. The FMAC will work with Canfor Alberta to:

- 1) Identify and select values, objectives, indicators and targets, based on the CSA SFM elements and any other elements of relevance to the DFA;
- 2) Develop, assess and select one or more possible strategies;
- 3) Review the SFM plan;
- 4) Design monitoring programs, evaluate results and recommend improvements; and
- 5) Discuss and resolve any issues relevant to SFM in the DFA.

Canfor and the FMAC shall ensure that the values, objectives, indicators and targets are consistent with relevant government legislation, regulations and policies. Additionally, they recognize Aboriginal and treaty rights, and agree that aboriginal participation in the public process will not prejudice those rights.

In addition, the FMAC will continue to:

- 1) Provide input regarding Forest Management Plan;
- 2) Provide input to the Annual Performance Monitoring Report; and
- 3) In partnership with Canfor, will review, refine and implement the Public Involvement Program.

## **B. Operating Rules**

### 1) Rules and conduct

The FMAC and its members agree to work by the following ground rules:

- a) All members will be given the opportunity to voice their perspectives;
- b) All members will listen to the range of perspectives;
- c) Meetings will be well-structured and facilitated to enable efficient progress; and
- d) Refreshments and food will be provided for the meetings.

### 2) Meetings

- a) Semi-annual meetings, unless additional meetings are required.
  - i) At each meeting, there will be an educational opportunity provided.
- b) Meeting dates:
  - i) Will be confirmed jointly between Canfor and the FMAC.
- c) Meeting notices:
  - i) At least two weeks advance notice of meeting dates will be given; and
  - ii) Generally, the next meeting date will be confirmed at each FMAC meeting.
- d) Meeting Location:
  - i) Meetings will be held at a time and place most suitable to the members of the group; and
- e) Meeting agendas:

- i) Will address, where possible, both the needs of the Forest Management Plan and CSA Certification;
  - ii) Input on upcoming meeting agendas will be obtained during each FMAC meeting; and
  - iii) Canfor will finalize the meeting agenda.
- f) Material, if available, will be provided for review in advance of meetings.

## **C. Communication and Information**

### Internal to FMAC:

- a) Canfor will ensure meeting minutes are distributed following each meeting;
- b) Canfor will provide the FMAC with information as it applies to the function and business of the FMAC. Confidential business information such as financial or human resource information may be deemed to be sensitive and proprietary and may not be released; and
- c) Canfor will provide access to information about the DFA and the SFM requirements.
- d) Canfor will provide one field tour opportunity annually.

### External:

- a) The Annual Performance Monitoring Report summarizes the progress that Canfor - Alberta has achieved in SFM requirements. This is distributed to the FMAC;
- b) Canfor will provide information to a broader public about the progress being made in the implementation of the CSA Standard through Canfor's website (<http://www.canfor.com/>);
- c) Canfor will make allowances for different linguistic, cultural, geographical or informational needs of interested parties as necessary;
- d) Only authorized members of the FMAC are to speak on behalf of the FMAC as agreed to by the group and Canfor;
- e) When communicating with the media, interest groups or the public at large, specific comments will not be attributed to any individual FMAC member without his/her prior consent; and
- f) If an FMAC member wishes to respond to the media, they are to speak on behalf of the interest group they represent only and:
  - I. Will be respectful of other members and other interest groups; and
  - II. Will not characterize the suggestions or positions of other members or interest groups in their discussions with the public or media.
- g) Canfor will provide the Registrar, upon request, with the contact information of the Advisory Committee. As part of the audit process they require input from SFM plan public advisory group members regarding implementation of SFM within Canfor's DFA. The Registrar is required to keep this information confidential. If a member chooses not to have his/her information released they must notify Canfor in writing.

### Internal to Canfor:

- a) Applicable recommendations from the FMAC will be reported at Woodlands meetings; and
- b) Applicable recommendations will be reported to the Forest Management Group Managers and then to the Corporate Environmental Management Committee.

## **D. Meeting Expenses and Logistics**

- 1) Meeting Expenses
  - a) On request, members are eligible for \$50 per ½ day meetings for expenses (full day meetings to be covered at \$100);
  - b) Additional travel costs to meetings will be reimbursed at \$0. 52/km;
  - c) If required, accommodation for members who must travel in excess of 1 hour for meetings will be covered; and
  - d) Expense forms for the above need to be submitted to Canfor for reimbursement.

## **E. Roles and Responsibilities**

### 1) FMAC Structure:

#### a) Structure will be inclusive with a range of representatives from any of the following;

Alberta Conservation Association  
Alberta Fish and Game Association  
Alberta Professional Outfitters Society  
Alberta Trappers Association  
Aseniwuche Winewak Nation  
Canadian Association of Petroleum Producers (CAPP)  
City of Grande Prairie  
DFA Related Worker  
Ducks Unlimited  
Grande Prairie #1, County of  
Grande Prairie and District Chamber of Commerce  
Grande Prairie Forest Educator  
Grande Prairie Regional College  
Grande Prairie Regional Tourism Association  
Horse Lake First Nation  
M.D. of Greenview No. 16  
Métis Nation Zone 6  
Métis Nation of Alberta  
Public member(s) at large  
Peace Wapiti School Division No. 76  
Saddle Hills County  
South Peace Environmental Association  
Sucker Creek First Nation  
Sturgeon Lake Cree Nation  
Town of Grande Cache  
Town of Spirit River  
Town of Valleyview  
And others as identified by the FMAC.

#### b) New or additional members will be considered on an annual basis.

#### c) In addition to the above members, advisors from the following will assist the group:

Canfor  
Government of Alberta  
Tolko Industries  
Norbord Inc.  
And others as identified by the FMAC.

### 2) FMAC Member's Role:

- a) To provide input as related to the Defined Goals (Section A) as related to the Forest Management Plan (FMP) and CSA planning processes;
- b) The voting members are responsible for consensus reaching and decision making for the FMAC;
- c) To act as a liaison between FMAC and the organization they are representing;
- d) To attend meetings regularly;
- e) Members will be appointed by each of the member organizations;

- f) Members can be replaced if more than 2 consecutive meetings are missed without a valid reason;
  - g) To replace a member, the member organization will be asked, by either the current member or by the Canfor representative, to reappoint a new member;
  - h) Canfor will confirm appointment;
  - i) Existing members, who no longer represent their original organization, may choose to remain on as members-at-large as this will provide ongoing continuity;
  - j) Use of Alternates:
    - i. an organization may appoint an alternate to act as an interim replacement for the member; and
    - ii. alternates are also guided by the Terms of Reference.
  - k) Conflict of Interest:
 

If a FMAC member (or alternate) has a perceived or real conflict of interest regarding their input related to the goals for the FMAC (Section A), this must be declared. The FMAC and Canfor will then decide at the meeting what actions are then needed. Potential actions could lead to restricted involvement in discussion and decision making for the conflicting topic.
- 3) Non-members:
- a) Non-members are by invitation and/or by request only;
  - b) Non-members are welcome to observe the FMAC meetings, but will not receive print materials;
  - c) Non-members may participate in discussions or make presentations only with agreement by the group, chairperson or facilitator;
  - d) Forestry students are encouraged to attend as non-members; and
  - e) Will not take part in reaching consensus or decision-making of the FMAC.
- 4) Canfor's Role:
- a) To review and consider the recommendations from the FMAC;
  - b) To make decisions regarding sustainable forest management and certification;
  - c) To report to the FMAC on how input was considered and that responses are provided;
  - d) To demonstrate that there is ongoing public communication about the DFA, including the public involvement process;
  - e) To provide the necessary human, physical, financial, and technological resources to the FMAC as necessary and reasonable;
  - f) Will not take part in reaching consensus or decision-making of the FMAC except in areas of conflict of interests as stated in 2(l);
  - g) Provide the Forest Management Advisory Committee Evaluation Form (Figure 4) (to be voluntarily filled out by FMAC members) at each meeting and report (the calculated satisfaction on each of the four sections of the evaluation) results with the minutes from each meeting to the members; and
  - h) Distribute the Sustainable Forest Management Plan, meeting minutes, annual performance monitoring report and other materials deemed necessary.
- 5) Advisor's Role:
- a) To actively provide background or technical information, participate in discussions and provide support to the FMAC group;
  - b) To clarify technical information for the FMAC group; and
  - c) Will not take part in reaching consensus or decision-making of the FMAC.

- 6) Chairperson/Facilitator's Role:
- a) To ensure that meetings address agenda topics;
  - b) To ensure that all members have an equitable opportunity to participate in the meeting;
  - c) To provide support in summarizing and clarifying issues, recommendations, etc.; and
  - d) Will not take part in reaching consensus or decision-making of the FMAC.

**Forest Management Advisory Committee Evaluation Form for Grande Prairie**

**FMAC Meeting Date:** \_\_\_\_\_ **Name (optional):** \_\_\_\_\_  
 The purpose of this form is to provide an opportunity for Forest Management Advisory Committee (FMAC) members to evaluate the effectiveness of the public participation process with the goal of facilitating continual improvement.

Please evaluate the following:	Very poor (1)	Not Satisfied (2)	Acceptable (3)	Satisfied (4)	Very Satisfied (5)
<b>A. Meeting and FMAC Process</b> <span style="float: right;"><b>Target 42 points</b></span>					
1. I have a good understanding of the purpose of the FMAC and my role as part of that group.					
2. Information provided in advance of meetings allows me to effectively contribute at meeting.					
3. The meeting agenda is reviewed prior to the meeting and followed					
4. The meeting minutes capture important aspects of the meeting including actions, progress updates, and any decisions.					
5. Communication with FMAC members between meetings is adequate.					
6. Canfor shares new information with FMAC members regarding impacts to the environment, sustainability, forestry, etc.					
7. The FMAC Terms of reference are followed.					
8. Were most FMAC members involved in meeting?					
9. Was your message received and acted on, if possible?					
10. Was there a positive atmosphere for the meeting?					
11. Was information presented clearly at the meeting?					
12. What is your overall satisfaction with the FMAC process?					
13. Ex-officio, licensee, or technical team members were organized and prepared for meeting.					
<b>B. FMAC Meeting Facilitation:</b> <span style="float: right;"><b>Target 20 points</b></span>					
14. FMAC meeting facilitator was organized and prepared.					
15. FMAC meeting facilitator strived for consensus decision making.					
16. Facilitator actively listened to concerns and viewpoints expressed during the meeting.					
17. FMAC meeting facilitator addressed process issues.					
18. FMAC meeting facilitator remained neutral on content issues					
19. FMAC meeting facilitator kept the meeting focused and moving.					
<b>C. Meeting Logistics:</b> <span style="float: right;"><b>Target 10 points</b></span>					
20. Was the meeting location convenient?					
21. Was the timing of the meeting convenient?					
22. Was the meal provided for the meeting good?					
<b>D. Yearly Assessment (Pertains to Annual Reporting, FMAC Recruitment and FMAC Representation):</b> <span style="float: right;"><b>Target 20 points</b></span>					
23. Efforts have been made to incorporate concerns related to SFM values and objectives into the SFM Plan.					
24. Concerns related to SFM indicators and targets are being adequately listened to at FMAC meetings.					
25. Efforts have been made to incorporate my concerns related to SFM indicators and targets into the SFM Plan.					
26. The outputs generated through discussion with the FMAC (SFM Plan and annual monitoring reports) are clear and concise.					
27. Canfor has made an effort to recruit new FMAC members as needed.					
28. A broad cross-section of the community is represented at FMAC meetings.					



<p><b>Suggestions for Improvement</b> – Please list ways to improve on subsequent FMAC meetings including meals, topics or presentations for future meetings, date changes...</p>
1.
2.
3.
<p><b>General Comments</b> – Please provide any comments or suggestions that you feel would improve the FMAC process, the SFM Plan or Annual Report or subsequent meetings:</p>

*Goal is to have 80% satisfaction or better on all 4 sections of evaluation form.*

Consent to be contacted for feedback? Y or N

Figure 4: FMAC Evaluation Form

## **F. Decision Making and Methodology**

- 1) The group agrees to work by consensus defined as:
  - a) Every effort shall be made to achieve consensus;
  - b) Consensus is defined as no member having substantial disagreement on an issue;
  - c) Consensus may consist of agreement on a summary of the different perspectives on an issue;
  - d) Decisions on specific issues will be considered interim consensus, unless agreed otherwise, until there is consensus on the full set of recommendations;
  - e) All decisions and recommendations will require involvement of at least 4 members; and
  - f) A member who is absent from a meeting where a decision was made, may request to have the decision reviewed at a future meeting. The chairperson/facilitator would identify when this would occur.

## **G. Dispute Resolution Mechanism**

- 1) Process Issues:
  - a) The chairperson/facilitator will resolve process issues.
- 2) Technical Issues:
  - a) The members will work to identify the underlying issues and work towards a solution in a positive friendly environment;
  - b) The members will seek compromise, alternatives and clarification of information needed;
  - c) The members will commit to arriving at the best solution possible; and



- d) If no consensus solution can be reached, then the outstanding issues will be summarized and forwarded to Canfor for their consideration. Canfor will be informed of the level of support and dissention with the issue.

## **H. Review of and Revisions to Terms of Reference**

The Terms of Reference will be updated as required.

The revision of the Terms of Reference requires the approval of the FMAC and Canfor.



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## Glossary

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**Annual Allowable Cut**

The volume of wood (m<sup>3</sup>) that can be harvested in one year from any area of forest under a sustained yield management regime. It is a calculation based on the potential fertility of the site, the state and potential of the stands currently growing in the forest, and assumptions about how existing or anticipated future stands will continue to grow, the risks of loss, and constraints on operability.

**Adaptive management**

A learning approach to management that recognizes substantial uncertainties in managing forests and incorporates into decisions experience gained from the results of previous actions.

**Alberta Vegetation Inventory**

A system for describing the quantity and quality of vegetation present. It involves the stratification and mapping of the vegetation to create digital data according to the Alberta Vegetation Inventory Standards Manual and associated volume tables.

**Anthropogenic**

Made or induced by humans.

**Annual Operating Plan**

A plan prepared and submitted annually by timber operators describing how, where and when to develop roads and harvest timber. It describes the integration of operations with other resource users, the mitigation of the impacts of logging, the reclamation of disturbed sites and the reforestation of harvested sites.

**Coarse woody debris**

Sound or rotting logs, stumps, or large branches that have fallen or been cut and left in the woods. CWD does not include dead branches still connected to living trees, self-supporting stumps and exposed roots of self-supporting trees (living or dead).

**Compliance**

The conduct or results of activities in accordance with legal requirements.

**Conformance**

Meeting non-legal requirements such as policies, work instructions, or standards (including CSA-Z809-08)

**Criterion**

A distinguishable characteristic of sustainable forest management; a value that must be considered in setting objectives and in assessing performance.

**Defined Forest Area**

A specified area of forest, land, and water delineated for the purpose of registration of a Sustainable Forest Management system. The DFA may or may not consist of one or more contiguous blocks or parcels (CSA. 2008).

**Deciduous Timber Allocation**

A deciduous timber allocation allocates rights to harvest deciduous trees such as aspen and balsam poplar. A Deciduous Timber Allocation allocates a specified volume of deciduous timber or a specific area of deciduous timber that the quota holder may harvest

**Dispersed Retention**

System retains individual trees within the cutblock for the purpose of maintaining or protecting environmental values and structural diversity.

**Edge effect**

Edge metrics are not spatially explicit and yet still represent a form of landscape configuration. Researchers have shown that edges are important to many ecological phenomena. Edges between forests of dramatically different structure or composition often have different microclimatic environments than interior habitats. These microclimatic differences, such as changes in wind and light intensity alter disturbance rates and vegetation composition and structure, and thus alter habitats and the dynamics of species that are dependent on these habitats. Some species prefer edge habitats; others are indifferent while still others are adversely affected by edges.

**Endangered**

A species facing imminent extirpation or extinction.

**Environmental Management System**

An Environmental Management System is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency.

**Endangered Species Conservation Committee**

Alberta's Endangered Species Conservation Committee advises the Minister of Sustainable Resource Development on matters relating to the identification, conservation and recovery of wild species at risk in Alberta. These principles are important in a provincial and federal context.

**Forest Ecosystem**

A forest ecosystem is a terrestrial unit of living organisms (plants, animals and microorganisms), all interacting among themselves and with the environment (soil, climate, water and light) in which they live. The environmental "common denominator" of that forest ecological community is a tree, who most faithfully obeys the ecological cycles of energy, water, carbon and nutrients.

**Forest Harvest Plan**

A map and associated report describing the laid out harvest plan as required by the Operating Ground Rules .

**Forest Management Agreement**

A legal agreement signed between the Company and the Province of Alberta. It defines the rights, responsibilities, and constraints that apply to a specified area of forest for the purpose of removing timber for commercial purposes. The forested

area to which the agreement applies is called the “FMA area.” Canfor’s FMA area is identified as Forest Management Unit G15.

**Forest Management Unit**

An area of forest managed as a unit for fibre production.

**General Development Plan**

A five year plan submitted annually to the Province.

**Historical Resource**

Any work of nature or of man that is primarily of value for its paleontological, archaeological, prehistoric, historic, cultural, natural, scientific or aesthetic interest including, but not limited to, a paleontological, archaeological, prehistoric, historic or natural site, structure or object.

**Indicator**

A variable that measures or describes the state or condition of a value.

**Indigenous-** A collective noun for all First Nations, Inuit, and Metis peoples of Canada

**Machine Free Zone**

The area protected from machinery that would cause soil damage.

**Noxious weed**

A plant under the Weed Regulation (AR 171/2001) of the Weed Control Act.

**Objective**

A broad statement describing a desired future state or condition for a value.

**Operating Ground Rules:**

Standards for operational planning and field practices that must be measurable and auditable and based on forest management plan objectives.

**Patch**

A stand of forest in the same seral stage not split by linear features greater than 40m wide.

**Preferred Forest Management Scenario**

The timber supply scenario and associated cover constraints and schedules that best meet the FMP objectives.