



***SUSTAINABLE FOREST MANAGEMENT  
2017 ANNUAL REPORT  
APRIL 1, 2017 TO MARCH 31, 2018  
CANFOR FORT NELSON***

***FINAL REPORT***

***Prepared by Darrell Regimbald, RPF***

***JUNE 5, 2018***

**June 5, 2018<sup>1</sup>**

**Acknowledgements**

Aliette Seigel RPF for preparing the template this report is based on.

Dawn Griffin RPF and Jason Smith RPF for assistance in preparing indicator summaries noted in the report.

---

<sup>1</sup> Cover page Photo Credit – Aliette Seigel, RPF

## Table of Contents

Acronyms .....	8
Executive Summary .....	9
Detailed Review of SFM Measure Performance .....	16
Criterion 1.0 Biological Diversity.....	16
1-1.1 - Ecosystem area by type .....	16
1-1.3 – Forest area by Seral stage or age class .....	18
1-1.4.1 - Degree of within stand structural retention – WTP percentage .....	18
1-1.4.2 – Degree of within stand structural retention – Dispersed Retention.....	19
1-1.4.3 – Degree of within stand structural retention – Riparian management.....	19
1-1.5 – Shrub Habitat .....	20
1-2.3 - Proportion of regeneration comprised of native species.....	21
1-3.1 - Percentage of stands artificially regenerated that are free from genetically modified organisms (GMO's) .....	21
1-4.1 - Proportion of identified sites with implemented management strategies.....	22
1-4.2 - Protection of identified sacred and culturally important sites .....	22
Criterion 2.0 Ecosystem Condition and Productivity .....	23
2-1.1.1 - Reforestation success – Regen Delay.....	23
2-1.1.2 - Reforestation success – Free Growing.....	23
2-1.1.3 - Percentage of silviculture obligation areas with significant detected forest health damaging agents which have treatment plans.....	24
2-1.1.4 - Evidence of efforts being made to manage known significant forest health damaging agents.....	24
2-2.1 - Additions and deletions to the forest area.....	25
2-2.2 - Proportion of long term sustainable harvest level that is actually harvested .....	25
Criterion 3.0 Soil and Water.....	26
3-1.1 - Level of soil disturbance .....	26
3-1.2 - Level of Downed woody debris .....	26
3-2.1.1 - Proportion of watersheds or water management areas with recent stand replacing disturbance – Watersheds .....	27
3-2.1.2 - Proportion of watersheds with recent stand replacing disturbance – Roads and Structures .....	28
Criterion 4.0 Role in Global Ecological Cycles .....	29
4-1.1.1 - Net carbon uptake – Total Carbon Storage.....	29
4-1.1.2 - Net carbon uptake – Sequestration rate.....	30
4-1.2 – Reforestation Success.....	30
4-2.1.1 - Addition and deletions to the forest area .....	31
4-2.1.2 - Evidence of best efforts to coordinate forest management activities with the oil and gas industry .....	31
Criterion 5.0 Economic and Social Benefits .....	32

5-1.1.1 - Quantity and quality of timber and non-timber benefits, products and services produced in the DFA - Timber .....	32
5-1.1.2 - Quantity and quality of timber and non-timber benefits, products and services provided in the DFA – Non-Timber .....	33
5-1.1.3 - Participants forest management activities will not negatively impact established recreational sites and trails.....	33
5-1.1.4 - Forest management activities will be consistent with Visual Quality Objectives (VQOs)	34
5-2.1.1 - Levels of investment in initiatives that contribute to community sustainability .....	34
5-2.1.2 - Amount of stumpage paid in the Fort Nelson DFA .....	35
5-2.2 - Level of investment in training and skills development.....	35
5-2.3 - Level of direct and indirect employment .....	36
5-2.4 - Level of Aboriginal participation in the forest economy.....	36
<b>Criterion 6.0 Societies Responsibilities .....</b>	<b>37</b>
6-1.1 - Evidence of good understanding of the nature of Aboriginal title and rights .....	37
6-1.2 - Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans.....	37
6-1.3 - Level of Management and/or Protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur .....	38
6-2.1 - Evidence of understanding and use of Aboriginal knowledge through the engagement of willing Aboriginal communities, using a process that identifies and manages culturally important resources and values.....	38
6-3.1 - Evidence that the organization has co-operated with other forest dependent businesses, forest users and the local community to strengthen and diversify the local economy.....	39
6-3.2 - Evidence of co-operation with DFA related workers to improve and enhance safety standards, procedures and outcomes in all DFA workplaces and affected communities .....	39
6-3.3 - Evidence that a worker safety program has been implemented and is periodically reviewed and improved. ....	40
6-4.1 - Level of Participant and PRISM satisfaction with the public participation process.....	40
6-4.2 - Evidence of efforts to promote capacity and meaningful participation in general .....	41
6-4.3 - Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities .....	41
6-5.2 - Availability of summary information on issues of concern to the public.....	43
Appendix 1 – SFMP Change Tables .....	45
Appendix 2 – Criterion 1 Supporting Data .....	51
Appendix 3 – Criterion 2 Supporting Data .....	60
Appendix 4 – Criterion 4 Supporting Data .....	67
Appendix 5 – Criterion 5 Supporting Data .....	69
Appendix 6 – Criterion 6 Supporting Data .....	76

**Tables**

Table 1: Summary of Canfor’s 2017 Measure Status .....	15
Table 2: Summary of Changes to Criteria from the 2004 SFMP to the 2011 SFMP .....	46
Table 3: Summary of changes from 2004 Measures to 2011 Indicators.....	47

Table 4: Dropped Measures from the Amended 2004 SFMP .....	50
Table 5: Rare and Uncommon Ecosystem Groups in the Fort Nelson DFA* .....	52
Table 6: Forest Cover Type (2011 dataset)* .....	52
Table 7: Forest Cover Type (2018 dataset)** .....	52
Table 8: Required Percentage of Retention in the DFA* .....	53
Table 9: Current Percentage of Old Seral Stage by NDU and LU* .....	55
Table 10: Current Stand Level Retention Percentage* .....	57
Table 11: Current Stand Level Retention Percentage* .....	58
Table 12: Area in Stands Less than 20 years old and polygons labelled as shrub area (TSR 3 VRI dataset 2018) .....	59
Table 13: Summary of Free Growing Data Blocks with Free Growing Date in 2017 .....	61
Table 14: Regen Delay Population January 1, 2017 – December 31, 2017 .....	63
Table 15: Plantation Pest Severity Ranking* .....	63
Table 16: Action Plan Summary for 2012 Burned Reforestation Obligations .....	63
Table 17: Total Deletions from the Forested Landbase* .....	64
Table 18: Oil and Gas Impact Risk Assessment* .....	65
Table 19: TSA Disturbance Impact by Sector .....	65
Table 20: Summary of ecosystem carbon storage in the forested landbase over a 250 year period* .....	68
Table 21: Average carbon sequestration rate in the forested landbase over a 250 year period* .....	68
Table 22: Recreation sites and trails in the Fort Nelson DFA* .....	70
Table 23: Visual Quality Objective Class* .....	72
Table 24: Maximum Allowable Disturbance Percentage by VQO Class* .....	73
Table 25: Percent Denudation for Established VQOs* .....	73
Table 26: Canfor Direct and Induced Employment.....	73
Table 27: Indirect and Induced Employment multipliers from 2006 TSR* .....	74
Table 28: Number of Opportunities offered to First Nations by year .....	74
Table 29: Proportion of Local Spend 5 year Rolling Average.....	75
Table 30: Summary of 2017 Public Participation Process Satisfaction Survey, Administered 2018\01\18 .....	77

## Figures

Figure 1: Fort Nelson Defined Forest Area .....	9
Figure 2: Comparison of measure achievement Canfor 2005 to 2017 .....	14
Figure 3: Deciduous, conifer and mixed wood forest stands. ....	17
Figure 4: Fort Nelson TSA Equivalent Clearcut Area.....	28
Figure 5: Canfor Polarboard OSB mill circa 2003.....	32
Figure 6 PRISM Discussion of Fire Impacts, Field Tour June 2016 .....	42
Figure 7 PRISM Field Tour June 2016 .....	43
Figure 8 Toad River, Fort Nelson Defined Forest Area. ....	44
Figure 9: Natural Disturbance Units of the Fort Nelson DFA* .....	54
Figure 10: Fort Nelson Visual Quality Objectives .....	71

## Glossary and Acronyms

**Adaptive Management:** A learning approach to management that recognizes substantial uncertainties in managing forests and incorporates into decisions the experience gained from the results of previous actions. Adaptive management can be simplified into "learning by doing."

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

**Biogeoclimatic Ecosystem Classification (BEC):** A hierarchical system of ecosystems that integrates regional, local and chronological factors and combines climatic, vegetation and site factors.

Biological richness (species richness): The number of species in a given area.

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

**Criterion:** A category of conditions or processes by which sustainable forest management may be assessed; characterized by a set of related indicators which are monitored periodically to assess change.<sup>1</sup>

**Crown Forest Land Base (CFLB):** Forested land managed by the Ministry of Forests and Range is referred to as the Crown forested land base. In the CFLB, specific conditions (e.g. a stand or a group of similar trees) are assigned either to the non-harvesting land base or to the timber harvesting land base. An area can only be removed for one reduction type; for example, the area of a stand that falls within a park, and also has sensitive soils, is assigned only once to the non-harvesting land base.

**Customary use rights:** The rights of First Nations peoples to use lands and resources based on culturally established patterns of utilisation and management which may include fishing; hunting; trapping; gathering of foods, medicines and materials for ceremonial, spiritual, sustenance, or fabrication (e.g. clothing, artwork, building, etc.) purposes.

**Defined Forest Area (DFA):** A specified area of forest, including land and water. The Defined Forest Area for the Sustainable Forest Management Plan is the Fort Nelson Forest District, excluding private land and woodlots.

**Forest Management System (FMS):** The FMS is a systematic means of identifying, addressing and managing environmental impacts and sustainable forest management commitments within Canfor's Woodlands operations.

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

**General Development Permit (GDP):** permit obtained by oil and gas sector to authorize limited development of an area in preparation for exploration activities for oil and gas.

**Global ecological cycles:** The complex of self-regulating processes responsible for recycling the Earth's limited supplies of water, carbon, nitrogen and other life-sustaining elements.

**Inoperable:** Lands that are unsuited for timber production now and in the foreseeable future because of a range of factors, including elevation; topography; inaccessible location; low value of timber; small size of timber stands; steep or unstable soils; or designation as parks, wilderness areas, or other uses incompatible with timber production.

**Indicator:** A measure of an aspect of the criterion; a quantitative or qualitative variable which can be measured or described and which, when observed periodically, demonstrates trends. <sup>1</sup>

**Landscape Unit:** a planning area, generally up to about 100,000 ha in size, delineated according to topographic or geographic features such as a watershed or series of watersheds. It is established by the district manager.

**Measure:** A set of variable that provides quantitative information about the status/standard established for an indicator.

**Natural disturbance:** the historic process of fire, insects, wind, landslides and other natural events in an area.

**Non Commercial brush (NCBR):** Describes potential productive forest land that is covered with either 'Forest' or 'Brush'.

**Natural Disturbance Unit (NDU):** These units separate areas based on differences in disturbance processes, stand development, and temporal and spatial landscape pattern.

**NHLB:** Non-Harvestable Land Base This is area not considered part of the THLB. This includes areas excluded from contributing to timber supply during the TSR process, such as parks, riparian reserve areas, inaccessible areas, inoperable areas, non-merchantable forest types, low productivity types, recreation features, and environmentally sensitive areas.

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

**Predictive Ecosystem Mapping (PEM):** A computer, GIS and knowledge-based method that divides landscapes into ecologically-oriented map units for management purposes.

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

**Regeneration delay:** the maximum time allowed in a prescription, between the start of harvesting in the area to which the prescription applies, and the earliest date by which the prescription requires a minimum number of acceptable well-spaced trees per hectare to be growing in that area.

**Riparian:** Area adjacent to a stream, river, lake or wetland. The FPC Riparian Management Area Guidebook defines it as "areas [that] occur next to the banks of streams, lakes, and wetlands and include both the area dominated by continuous high moisture content and the adjacent upland vegetation that exerts an influence on it".

**Riparian Reserve Zone (RRZ):** The portion of the riparian management area or lakeshore management area located adjacent to a stream, wetland or lake.

**Seral:** the stage of development of an ecosystem, from a disturbed, un-vegetated state (early-seral) to a mature plant community (late-seral).

**Site Index:** an expression of the forest site quality of a stand, at a specified age, based either on the site height, or on the top height, which is a more objective measure.

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

**Stream Crossing Quality Index:** a field based hazard assessment of the potential for accelerated erosion and sediment delivery at stream crossings. The procedure evaluates and scores the potential for eroded sediment to reach the stream environment. A high score infers that there is a significant erosion problem which may in turn cause sediment related water quality problems.

**Sustainable Forest Management (SFM):** Management “to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social and cultural opportunities for the benefit of present and future generations”<sup>2</sup>

**Target:** A specific statement describing a desired future state or condition of measure. Targets should be clearly defined, time-limited and quantified, if possible.

**Timber Harvesting Landbase (THLB):** The area of the Defined Forest Area available for timber extraction.

**Traditional Use Study (TUD):** Compilation of data respecting historic use of the land and resources by First Nations

Acronyms

<b>AAC</b> Allowable Annual Cut	<b>MOFR</b> British Columbia Ministry of Forests and Range
<b>AIA</b> Archaeological Impact Assessment	<b>MPS</b> Market Pricing System
<b>AMD</b> Amendment	<b>NSOGO</b> Non Spatial Old Growth Order
<b>AOA</b> Archaeological Overview Assessment	<b>NSR</b> Not Satisfactorily Restocked
<b>BCTS</b> BC Timber Sales	<b>NTPF</b> Non-Timber Forest Products
<b>BEC</b> Biogeoclimatic Ecosystem Classification	<b>OGMA</b> Old Growth Management Area
<b>BEO</b> Biodiversity Emphasis Option	<b>OHSC</b> Occupational Health and Safety Committee
<b>Canfor</b> Canadian Forest Products Ltd.	<b>OSB</b> Oriented Strandboard
<b>CHR</b> Cultural Heritage Resource	<b>PAG</b> Public Advisory Group
<b>CFS</b> Canadian Forest Service	<b>PEM</b> Predictive Ecosystem Mapping
<b>CFLB</b> Crown forested land base	<b>PMP</b> Pest Management Plan
<b>COPI</b> Creating Opportunity for Public Involvement	<b>PRISM</b> Public Response for Informed Sustainable Management
<b>CP</b> Cutting Permit	<b>RMZ</b> Riparian Management Zone
<b>DBH</b> Diameter at Breast Height	<b>ROS</b> Recreation Opportunity Spectrum
<b>EFG</b> Early Free Growing	<b>RRZ</b> Riparian Reserve Zone
<b>FDP</b> Forest Development Plan	<b>RVQC</b> Recommended Visual Quality Class
<b>FMS</b> Forest Management System	<b>SDE</b> Spatial Data Engine
<b>FG</b> Free Growing	<b>SFMP</b> Sustainable Forest Management Plan
<b>FIA</b> Forest Investment Account	<b>SI50</b> Site Index for age 50
<b>FPC</b> Forest Practices Code	<b>SOP</b> Standard Operating Procedure
<b>FSP</b> Forest Stewardship Plan	<b>Sx</b> White Spruce
<b>CENGEA</b> Name for data management system	<b>TBD</b> To be determined
<b>GIS</b> Geographic Information Systems	<b>THLB</b> Timber Harvesting Land Base
<b>GMZ/GRZ</b> General Resource Zone	<b>TSA</b> Timber Supply Area
<b>ILMB</b> Integrated Land Management Bureau	<b>TSR</b> Timber Supply Review
<b>ITS</b> Incident Tracking System	<b>UWR</b> Ungulate Winter Range
<b>KDC</b> Kaska Dene Council	<b>VRI</b> Vegetation Resources Inventory
<b>LFG</b> Late Free Growing	<b>VQO</b> Visual Quality Objective
<b>LRMP</b> Land Resources Management Plan	<b>WQCR</b> Water Quality Concern Rating
<b>LU</b> Landscape Unit	<b>WHA</b> Wildlife Habitat Area
<b>LUPG</b> Landscape Unit Planning Guide	<b>WTP</b> Wildlife Tree Patch
<b>MAI</b> Mean Annual Increment	<b>WTR</b> Wildlife Tree Retention
<b>MOA</b> Memorandum of Agreement	

<sup>2</sup> The State of Canada’s Forests 2001/2002, as cited by the CSA.



## Executive Summary

### Fort Nelson Defined Forest Area location

The Defined Forest Area (DFA) of the SFM Plan is the Fort Nelson Timber Supply Area (TSA) as described for the Timber Supply Review. The Fort Nelson DFA is located in the northeastern corner of British Columbia and covers approximately 9.8 million hectares, bordering Alberta to the east and the Northwest Territories and the Yukon Territory to the north. The Alaska Highway (Highway # 97) is the main access to the town of Fort Nelson and the only major service road within the DFA. The Alaska Highway leads travelers north from Dawson Creek, BC, through the Yukon to Fairbanks, Alaska. The 317 Road (Highway 77), so named because it begins 17 miles from Fort Nelson (Mile 300 on the Old Alaska Highway), is the only other year round road access to the Fort Nelson area, providing access to the Northwest Territories (source MOFR website).

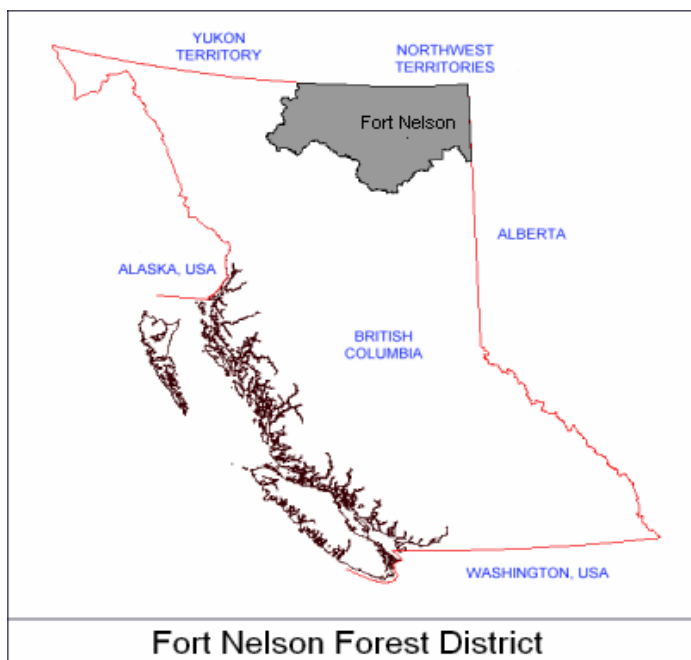


Figure 1: Fort Nelson Defined Forest Area

### Purpose

This report is prepared as part of the annual assessment to confirm Canfor's continued implementation of the CSA SFM standard. This report is the 12th edition since registration to the CSA-Z809-02 standard in 2005 and provides a status from April 1, 2016 to March 31, 2017 of the locally developed measures of the SFMP. The SFM Annual Report target completion date is September 30<sup>th</sup> annually. In this report, each measure is re-iterated, and a brief status update is provided. For further reference to the intent of the measures, or the practices involved, the reader should refer to Canfor's Sustainable Forest Management Plan for the Fort Nelson DFA (SFMP, second edition April 1, 2011).

The development of an updated SFM Plan in conformance with the requirements of the CSA Z809-08 standard was concluded on April 1, 2011. This annual report will summarise performance under the indicators included in the revised SFMP second edition (April 1, 2011). Reporting for BC Timber Sales is provided in a separate report generated by BC Timber Sales.

### Circumstances affecting SFM process

Canfor Corporation announced on January 18th, 2008 that due to poor wood product markets, a high Canadian dollar and record low oriented strand board (OSB) prices, its PolarBoard OSB and Tackama plywood mills in Fort Nelson would be closing indefinitely. The Polarboard closure took effect once the existing inventories were utilized and finished products shipped, which occurred in early June 2008. On February 26th, 2008 it was announced that Canfor's Fort Nelson Tackama mill would continue operations, largely because of the efforts of the United Steel Workers Union, employees, suppliers, the provincial government and contractors to identify means to reduce costs at Tackama and establish a business case to keep Tackama operating. Through the contributions of the union, employees, contractors and suppliers and policy changes announced by the provincial government a business case was made to continue operations at Tackama. The business case was predicated upon

Tackama realizing the intended cost savings and continued positive performance of plywood markets. Although Tackama had performed very well and achieved record production targets, Canfor Corporation reassessed Tackama's situation and announced on October 8th, 2008 that due to the continued poor demand and low prices for plywood across North America, it would be closing indefinitely the Tackama plywood plant in Fort Nelson. The market conditions and future outlook for plywood prices were not encouraging, with no evidence of a turnaround in the near future and consequently Canfor decided to curtail production to address the reduced market demand. The indefinite shutdown of the Canfor mills which began in 2008 has continued through the subject reporting year. As of the date of completion of this report, the Canfor mills in Fort Nelson remain indefinitely closed.

The closure of the PolarBoard mill, followed later by the closure of the Tackama mill affects local forest management and the PRISM Public Advisory Group in the following ways:

- Reduced and/or no operational harvesting activities affects reporting of certain measures, rendering reporting on current status of much of the indicators as static until resumption of harvest activity;
- Cessation of harvest activities reduces the economic benefit of forest management to the region;
- With the exception of the added meetings required to discuss revisions to the SFM plan, suspended harvesting activities has reduced the need to continue with frequent PAG meetings, resulting in reduced numbers of meetings and field tours;
- Difficulty in attracting new PAG members and promoting general interest in forestry in the community.

### **Overview of Canfor Achievements**

For the 2017 reporting year the following list describes the results achieved:

- ✓ 46 of the 48 measures were achieved (95.8%),
- ✓ 2 measures are pending (4.2%),
- ✓ 0 of the indicator objectives were not met (0.0%).

The overview of target achievements in this section captures Canfor's performance measures. BC Timber Sales is responsible for reporting their achievements through their Annual Report. Figure 2 below compares the 2017 measure achievement to previous reporting periods and Table 1 shows the status of each individual measure. Very similar indicator performance for the 2017 reporting year is noticeable, with respect to the number of indicators either pending or not achieved. Measures that were not met will be discussed during the upcoming Management Review and actions will be identified that should result in improving trends.

With the shutdown of the Canfor mills in Fort Nelson, no Canfor harvest activities took place in 2017/18. As a result, many measures directly linked to harvest activities do not contain new data and those often refer to the 2008 data (last year of harvesting activities) or recent updates to various indicators including seral stage, forest types, shrubs and additions/deletions to the forest landbase. It is anticipated that the upcoming 2018/17 Annual Report will continue to provide minimal new reporting of measures that are directly influenced by harvest activities. Table 1 identifies the measures that will receive minimal reporting and are recommended to be deferred for full reporting until harvesting activities resume.

## Revisions to Sustainable Forest Management Plan

The Fort Nelson SFMP was revised in winter 2018 to conform to the CSA Z809-16 standard. The SFMP indicators were renumbered sequentially. Old indicator 6.5.1 was merged with 6.4.2. Two new indicators (#31 and #42) were added to the plan, monitoring of the new indicators took effect April 1, 2018. These new indicators will be included in the 2018-19 SFM annual report.

Following is a list of the indicators included in the May 9, 2018 version of the Fort Nelson SFMP.

Criteria 1 – Biological Diversity	
Element 1.1 Ecosystem Diversity	CSA Core
1 – Ecosystem area by type	1.1.1
2 – Forest area by type or species	1.1.2
3 – Forest area by seral stage or age class	1.1.3
4 – Degree of within stand structural retention – WTP percentage	1.1.4
5 – Degree of Within stand structural retention – Dispersed retention	1.1.4
6 – Degree of within stand structural retention – Riparian management	1.1.4
7 – Shrub Habitat across the DFA	
Element 1.2 Species Diversity	CSA Core
8 – Degree of habitat protection for selected focal species including species at risk	1.2.1
9 – Degree of suitable habitat in the long term for selected focal species including species at risk	1.2.2
10 – Proportion of regeneration comprised of native species	1.2.3
Element 1.3 Genetic Diversity	CSA Core
11 – Percentage of stands reforestation programs free of genetically modified organisms	
Element 1.4 Protected Areas and Sites of Special Biological and Cultural Significance	CSA Core
12 – Proportion of identified sites with implemented management strategies	1.4.2
13 – Protection of identified sacred and culturally important sites	1.4.1
Criteria 2 – Ecosystem Condition and Productivity	
Element 2.1 Forest Ecosystem Condition and Productivity	CSA Core
14 – Reforestation success – Regen delay	2.1.1
15 – Reforestation success – Free Growing	2.1.1
16 – Percentage of silviculture obligation areas with significant detected forest health damaging agents which have treatment plans	
17 – Evidence of efforts being made to manage known significant forest health damaging agents	
10 – Proportion of regeneration comprised of native species	2.1.2
18 – Additions or deletions to the forest area	2.1.3
19 – Proportion of the calculated long term sustainable harvest level that is actually harvested	2.1.4

Criteria 3 – Soil and Water

Element 3.1 Soil Quality and Quantity CSA Core

- 20 – Level of soil disturbance 3.1.1
- 21 – Level of downed woody material 3.1.2

Element 3.2 Water Quality and Quantity CSA Core

- 22 – Proportion of watershed or water management areas with recent stand replacing events - Watersheds 3.2.1
- 23 – Proportion of watershed or water management areas with recent stand replacing events - Roads 3.2.2

Criteria 4 – Role in Global Ecological Cycles

Element 4.1 Carbon Uptake and Storage CSA Core

- 24 – Net Carbon Uptake – Total carbon storage 4.1.1
- 25 – Net Carbon Uptake – Carbon sequestration rate 4.1.1
- 14 – Reforestation Success 4.1.2

Element 4.2 Forest Land Conversion CSA Core

- 18 – Additions and deletions to the forest area 4.2.1
- 26 – Evidence of best efforts to coordinate forest management activities with the oil and gas industry

Criteria 5 – Economic and Social Benefits

Element 5.1 Timber and Non-Timber Benefits

- 19 – Proportion of long term sustainable harvest level that is actually harvested
- 27 – Conformance with strategies for non-timber benefits identified in plans 5.1.1
- 28 – Participants forest management activities will not negatively impact established recreational sites and trails
- 29 – Forest Management Activities will be consistent with Visual Quality Objectives (VQO's)
- 30 – Evidence that the organization has cooperated with other forest-dependant businesses, forest users and local community to strengthen and diversify the local economy 5.1.1
- 31 – Evidence of communication and consideration of non-timber resources into forest management planning 5.1.2

Element 5.2 Communities and Sustainability	CSA Core
--	----------

- |  |       |
|--|-------|
| 32 – Level of participation and support in initiatives that contribute to community sustainability | 5.2.1 |
| 33 – Amount of Stumpage paid in the Fort Nelson DFA  |       |
| 34 – Level of participation and support in training and skills development                         | 5.2.2 |
| 35 – Level of direct and indirect employment   | 5.2.3 |

Criteria 6 – Society’s Responsibilities
---

Element 6.1 Fair and Effective Decision Making	CSA Core
--	----------

- |  |       |
|--|-------|
| 36 – Level of participant and PRISM member satisfaction with the public participation process    | 6.1.1 |
| 37 – Evidence of efforts to promote capacity development and meaningful participation in general | 6.1.2 |
| 38 – Availability of summary information on issues of concern to the public                      | 6.1.3 |

Element 6.2 Safety	CSA Core
--------------------	----------

- |   |       |
|---|-------|
| 39 – Evidence of cooperation with DFA-Related workers to improve and enhance safety standards, procedures and outcomes in all DFA-related workplaces and affected communities | 6.2.1 |
| 40 – Evidence that a worker safety program has been implemented and is periodically reviewed and improved   | 6.2.2 |

Criteria 7 – Aboriginal Relations
-----------------------------------

Element 7.1 Aboriginal and Treaty Rights	CSA Core
--	----------

- |  |       |
|--|-------|
| 41 – Evidence of a good understanding of the nature of Aboriginal title and rights                         | 7.1.1 |
| 42 – Evidence of ongoing communication with Aboriginal communities and consideration of information gained | 7.1.2 |

Element 7.2 Respect for Aboriginal Forest Values, Knowledge and Uses	CSA Core
--	----------

- |  |       |
|--|-------|
| 43 – Level of Aboriginal participation in the forest economy   | 7.2.1 |
| 44 – Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans   | 7.2.2 |
| 45 – 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 | 7.2.2 |
| 46 – Level of management and/or protection of areas where culturally important practices and activities occur  | 7.2.3 |

## Summary of 2017 Measures Performance

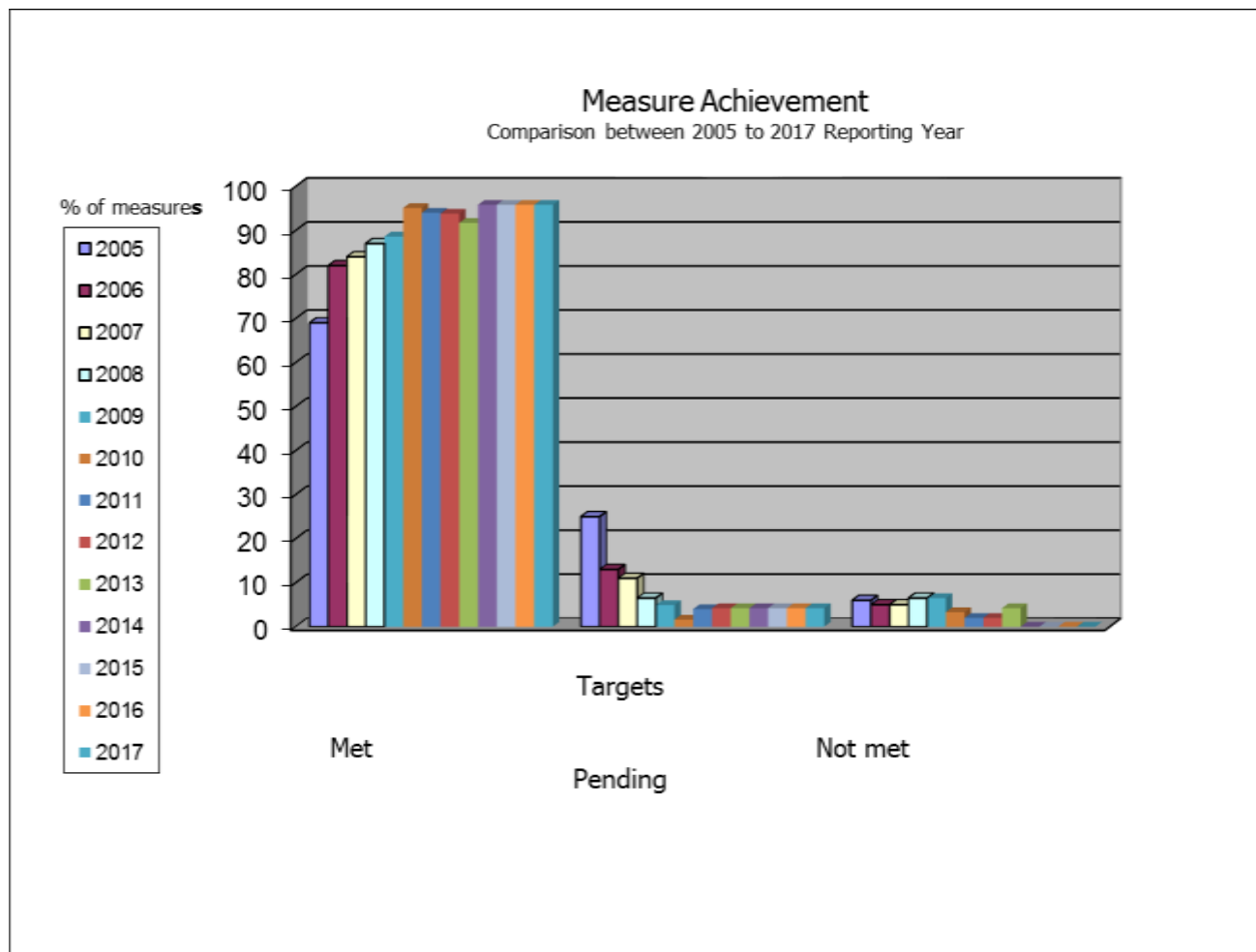


Figure 2: Comparison of measure achievement Canfor 2005 to 2017

**Table 1: Summary of Canfor's 2017 Measure Status**

Measure		Target Met	Target Pending	Target Not Met	Minimal reporting
1.1.1	Ecosystem area by type	✓			✓
1.1.2	Forest area by type or species	✓			✓
1.1.3	Forest area by seral stage or age class	✓			✓
1.1.4.1	Degree of within stand structural retention – WTP Percentage	✓			✓
1.1.4.2	Degree of within stand structural retention – Dispersed Retention	✓			✓
1.1.4.3	Degree of within stand structural retention – Riparian Management	✓			✓
1.1.5	Shrub Habitat	✓			✓
1.2.1 and 1.2.3	Degree of habitat protection for selected focal species including species at risk <b>and</b> degree of suitable habitat in the Proportion of regeneration comprised of native species	✓			✓
1.3.1	Percentage of stands artificially regenerated that are free of genetically modified organisms (GMOs)	✓			
1.4.1	Proportion of identified sites with implemented management strategies	✓			
1.4.2	Protection of identified sacred and culturally important sites	✓			
2.1.1.1	Reforestation success – Regen Delay	✓			
2.1.1.2	Reforestation success – Free Growing	✓			
2.1.1.3	Percentage of silviculture obligation areas with significant detected forest health damaging agents which have	✓			
2.1.1.4	Evidence of efforts being made to manage known significant forest health damaging agents	✓			
2.2.1	Additions and deletions to the forest area	✓			✓
2.2.2	Proportion of long term sustainable harvest that is actually harvested		✓		✓
3.1.1	Level of soil disturbance	✓			✓
3.1.2	Level of downed woody debris	✓			✓
3.2.1.1	Proportion of watershed or water management areas with recent stand replacing disturbance - Watersheds	✓			✓
3.2.1.2	Proportion of watershed or water management areas with recent stand replacing disturbance – Roads and road structures	✓			✓
4.1.1.1	Net carbon uptake – Total Carbon Storage	✓			✓
4.1.1.2	Net carbon uptake – Sequestration rate	✓			✓
4.1.2	Reforestation success – <b>Covered by indicator 2.1.1</b>	✓			
4.2.1.1	Addition and deletions to forest area – <b>Covered by indicator 2.2.1</b>	✓			✓
4.2.1.2	Evidence of best efforts to coordinate forest management activities with the oil and gas industry	✓			
5.1.1.1	Quantity and quality of timber and non-timber benefits, products and services in the DFA – Timber – <b>Covered by indicator 2.2.2</b>		✓		✓
5.1.1.2	Quantity and quality of timber and non-timber benefits, products and services in the DFA – Non-timber	✓			
5.1.1.3	Participants forest management activities will not negatively impact established recreational sites and trails	✓			✓
5.1.1.4	Forest management activities will be consistent with Visual Quality Objectives (VQO's)	✓			✓
5.2.1.1	Level of investment in initiatives that contribute to community sustainability	✓			✓
5.2.1.2	Amount of stumpage paid in the Fort Nelson TSA	✓			✓
5.2.2	Level of investment in training and skills development	✓			
5.2.3	Level of direct and indirect employment	✓			✓
5.2.4	Level of aboriginal participation in the forest economy	✓			✓
6.1.1	Evidence of good understanding of the nature of aboriginal title and rights	✓			
6.1.2	Evidence of best efforts to obtain acceptance of management Plans based on Aboriginal communities having a clear understanding of the plans	✓			
6.1.3	Level of management and/or protection of areas where culturally important practices and activities (hunting/fishing/gathering) occur	✓			
6.2.1	Evidence of understanding and use of Aboriginal knowledge through the engagement of willing Aboriginal communities using a process that identifies and manages culturally important resources and values	✓			
6.3.1	Evidence that the organization has cooperated with other forest dependent businesses, forest users and the local community to strengthen and diversify the local economy.	✓			
6.3.2	Evidence of cooperation with DFA related workers to enhance safety standards, procedures and outcomes in all DFA workplaces and affected communities	✓			
6.3.3	Evidence that a worker safety program has been implemented and is periodically reviewed and improved	✓			
6.4.1	Level of participant and Prism member satisfaction with the public participation process	✓			
6.4.2	Evidence of efforts to promote capacity development and meaningful participation in general	✓			
6.4.3	Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities – <b>Covered by indicator 6.1.2</b>	✓			
6.5.1	Number of People reached through educational outreach	✓			
6.5.2	Availability of summary information on issues of concern to the public	✓			
<b>Total</b>		<b>46</b>	<b>2</b>	<b>0</b>	

## Continuous Improvement

To facilitate reporting and continuous improvement of the measures and targets in the SFM Plan, and to ensure that data is collected in a timely and orderly fashion, each measure will be recorded and tracked. This will occur either in Canfor's Cengea Resources' module or in a separate database specific to the measure. CENGEA acts like a warehouse for most SFM tasks, tracking responsibilities, due dates, and progress comments.

## Detailed Review of SFM Measure Performance

### Criterion 1.0 Biological Diversity

#### 1-1.1 - Ecosystem area by type

Measure 1-1.1	
Target	Results
Based on a percent representation of ecosystem groups across the DFA:	Canfor did not complete any harvesting or road construction during the reporting period. Therefore no activities were completed involving rare or uncommon ecosystems. This indicator is therefore considered to be achieved.
A) 100% of the rare and uncommon ecosystems will have special management strategies associated with them (0%)	
B) 100% of the strategies for rare and uncommon ecosystems will be followed.	

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
The ecosystem representation analysis for the Fort Nelson DFA was updated in 2011/12. Prior to resumption of harvest activities the management strategies currently identified for rare and uncommon ecosystems and will be updated to be consistent with the revised 2011/12 ERA results. Those ecosystems found to be uncommon or rare in the NHLB will be subject to specific management strategies where they occur in the THLB.

References
Table 5: Rare and Uncommon Ecosystem Groups in the Fort Nelson DFA in Appendix 2.



**1-1.2 – Forest area by type and species**

Measure 1-1.2	
Target	Results
Percent distribution of Forest type (treed conifer, treed broadleaf, treed mixed) >20 years old across the DFA. Target is to maintain baseline ranges and distribution in the future (5%)	Canfor was not actively harvesting or constructing roads or reforestation during the reporting period. Accordingly, there was no effect on the forest type distribution. This indicator is considered met due to zero net effect on the indicator.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
The forest cover type analysis was updated in May 2018. The revised forest cover data is presented in Appendix2 Table 6A and 6B.

References
See Table 6: Forest Cover Type in Appendix 2.



Figure 3: Deciduous, conifer and mixed wood forest stands.

**1-1.3 – Forest area by Seral stage or age class**

Measure 1-1.3	
Target	Results
Percent of late seral stage (old growth) distribution by natural disturbance unit is maintained at the legal target for old growth as set by the Non-Spatial Old Growth Objectives of the Fort Nelson Forest District Order (NSLBOO) and spatially established OGMA's or to trend positive each year toward meeting the legal target.%)	There are no legal spatial OGMA's within the Fort Nelson resource District. Canfor was not actively harvesting or constructing road during the reporting period. Accordingly there was no effect on the late seral stage forest distribution across the DFA. The non spatial old forest targets are achieved in each of the natural Disturbance Units of the Fort Nelson Resource District. This indicator is considered met due to zero net effect on the indicator.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
None at this point.

References
See Table 8: Required Percentage of Retention in the DFA, Figure 9: Natural Disturbance Units of the Fort Nelson DFA and Table 9: Current Percentage of Old Seral Stage by NDU in Appendix 2 for a summary of the data supporting this indicator. The seral status was updated in the 2015-2016 annual report.

**1-1.4.1 - Degree of within stand structural retention – WTP percentage**

Measure 1-1.4.1	
Target	Results
Percent of within stand structure retained across the DFA in harvested areas: A) 100% conformance with landscape level (LU) target of 7% set by FRPA for all new harvesting (0%) B) positive trend toward the baseline 7% in LU's where current level of retention is deficient	Canfor completed no harvesting activities in the reporting period. No harvesting occurred since the calculation of the 2010 baseline data for the 2011 SFMP. Accordingly, there was no effect on the percentage of WTP retention within the DFA and the trend was unaffected as well. This indicator is considered met due to zero net effect on the target.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
The Canfor Forest Stewardship Plan (FSP) WTP retention target was amended in 2012 to be consistent with the target noted in the SFMP. No harvesting has been completed under the revised WTP retention targets.

References
See Table 10: Current Stand Level Retention Percentage in Appendix 2.

**1-1.4.2 – Degree of within stand structural retention – Dispersed Retention**

Measure 1-1.4.2		
Target	Results	
Percent of blocks meeting dispersed retention levels as prescribed in the site/logging plan, target of 100% (0%)	Canfor completed no harvesting activities during the reporting period. Accordingly there was no effect on the indicator target. This indicator is considered met due to zero net effect on the target.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
This indicator was added to the 2011 SFMP.		
References		

**1-1.4.3 – Degree of within stand structural retention – Riparian management**

Measure 1-1.4.3		
Target	Results	
Number of non-conformances where forest operations are not consistent with riparian management requirements as identified in operational plans, target of 0 non conformances. (Variance of 0)	Canfor completed no harvesting activities during the reporting period. Accordingly, there were no non-conformances with riparian management requirements in operational plans. This indicator is considered met due to zero net effect on the target.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

**1-1.5 – Shrub Habitat**

Measure 1-1.5		
Target	Results	
A) Sustain current baseline shrub habitat percentage in the THLB (1% of CFLB)	Canfor completed no harvesting or road construction activities during the reporting period therefore our forest activities had no effect on the shrub percentage in the THLB. This target is considered met due to zero net effect on the target.	
B) Monitor shrub habitat percentage in the NHLB		
Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
Consider revising indicator & target to focus on avoidance of conversion of shrub land to forest land, such as “Over a defined period, shrub area converted to forest land by the participants will not exceed “X”% of the total shrub land in the Gross Harvesting Landbase”.
References
See <b>Error! Reference source not found.</b> in Appendix 2.

**1-2.1 – Degree of Habitat protection for selected focal species including species at risk, and**

**1-2.2 – Degree of suitable habitat in the long term for selected focal species including species at risk.**

Measure 1-2.1 and 1-2.2	
Target	Results
Percentage of forest management activities consistent with management strategies for species of management concern, target of 100% conformance with management strategies. (Variance of 0).	Canfor completed no harvesting or road construction activities during the reporting period therefore no activities took place that would have the potential to impact habitat of a species of management concern. This target is considered met due to zero net effect on the target.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
None at this point.
References

**1-2.3 - Proportion of regeneration comprised of native species**

Measure 1-2.3		
Target	Results	
Regeneration will be consistent with provincial regulation and standards for seed and vegetative material use. Target of 100% conformance with standards (0).	Canfor's planting activities during the reporting period were in conformance with the Chief Forester's Standards for Seed Use. Seedlings were planted from local seed collected in Fort Nelson in accordance with the Chief Forester's Standards for Seed Use. This target has been met.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

**1-3.1 - Percentage of stands artificially regenerated that are free from genetically modified organisms (GMO's)**

Measure 1-3.1		
Target	Results	
100 percent of stands artificially reforested by participants will be free of GMO's. (Variance of 0%).	Canfor's planting activities during the reporting period were in conformance with the Chief Forester's Standards for Seed Use. All blocks were planted with seedlings grown from locally harvested seed as mentioned in indicator 1.2.3. No genetically modified organisms were used to reforest any areas in the DFA. This target has been met.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

**1-4.1 - Proportion of identified sites with implemented management strategies**

Measure 1-4.1		
Target	Results	
100 percent of forest management activities consistent with management strategies for protected areas and sites of biological significance (Variance of 0%)	Canfor completed no harvesting or road construction activities during the reporting period therefore no activities took place that would have the potential to impact protected areas or sites of biological significance. Silviculture activities were consistent with operational plans. This indicator is considered met due to zero impact on the target.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
The indicator target and variance includes sites of cultural significance made known to the participants by First Nations and other parties.		
References		

**1-4.2 - Protection of identified sacred and culturally important sites**

Measure 1-4.2		
Target	Results	
100 percent of identified Aboriginal forest values, knowledge and uses considered in forestry planning processes (0).	Canfor completed no harvesting or road construction activities during the reporting period, accordingly no activities took place that would have the potential to impact identified sacred or culturally important sites. No sites of significance to first nations to be addressed by planning or silviculture processes were brought forward to Canfor during this reporting period. This indicator is considered met due to zero harvesting activities having occurred.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
Inherent in the SFMP description of this indicator is the understanding that the consideration of Aboriginal forest values, knowledge and uses in forestry planning also includes addressing the mitigation of potential negative impact of these items and known sites of cultural importance to First Nations by way of site level plans.		
References		

## Criterion 2.0 Ecosystem Condition and Productivity

### 2-1.1.1 - Reforestation success – Regen Delay

Measure 2-1.1.1		
Target	Results	
100 percent of stands established annually will have an average regeneration delay of 3 years or less (variance Site Plan specific)	No blocks were due to be established in the reporting period. Fill planting of previously established stands occurred in 2017 to maintain stocking within target thresholds. This target has been met.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
.		
References		
See Appendix 3 Table 13.		

### 2-1.1.2 - Reforestation success – Free Growing

Measure 2-1.1.2		
Target	Results	
100 percent compliance with free growing timelines prescribed in site plans (0)	100% of all blocks required to be free growing in 2017 achieved free growing status and were declared as free growing. This target has been met.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
References		
See Appendix 3 Table 12.		

**2-1.1.3 - Percentage of silviculture obligation areas with significant detected forest health damaging agents which have treatment plans**

Measure 2-1.1.3	
Target	Results
100 Percent of sites with significant forest health damaging agents will have a treatment plan developed and initiated within one year of detection (0)	All blocks found to have a significant forest health damaging agent that threatens the survival of the stand have had treatment plans developed. The most significant damaging agent found in blocks surveyed in 2017 was competing vegetation. These blocks have been scheduled for vegetation management and/or fill planting treatments. This indicator target has been achieved.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
Wildfires in the Kotcho area destroyed a number of Canfor's plantations in 2012. Action plans were developed in 2013 to deal with reforesting these areas.
References
See Appendix 3 Table 15

**2-1.1.4 - Evidence of efforts being made to manage known significant forest health damaging agents**

Measure 2-1.1.4	
Target	Results
<b>a)</b> Annually report out on percentage of harvest activity that is focused on the treatment of stands damaged by or susceptible to damage by natural events or damaging agents	Canfor completed no harvesting or road construction activities during the reporting period, accordingly no harvest salvage or sanitation activities took place that would have the potential to impact significant forest health damaging agents. Canfor has implemented brushing activities where required. Canfor staff were members of the Fort Nelson Mountain Pine Beetle Task Force during the reporting period. Therefore, this indicator is considered to have been met.
<b>b)</b> Annually report out on participation in management efforts within the DFA (committees, Task Forces, etc.) for significant forest health damaging agents	

Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		



**2-2.1 - Additions and deletions to the forest area**

Measure 2-2.1		
Target	Results	
Report out the percentage of gross forested landbase (CFLB) in the DFA converted to non-forest land use through forest management activities. Target of less than 3% of the gross forested landbase at any given time (variance of 0%).	Canfor completed no harvesting or road construction activities during the reporting period, accordingly no forest management activities took place that converted forest land to non forest land use. This indicator target is considered achieved.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
The baseline data for this indicator was updated in 2018 using TSR4 data.		
References		
See Appendix 3 Table 16.		

**2-2.2 - Proportion of long term sustainable harvest level that is actually harvested**

Measure 2-2.2		
Target	Results	
Percentage of volume harvested compared to the long term harvest level (AAC) with a target of 100 percent over 5 years (10%)	Canfor completed no harvesting or road construction activities during the reporting period. This indicator target is considered pending.	
Target Met		
Yes	No	✓ Pending
Recommendations and Next Steps		
The PRISM has agreed that reporting of the Participants performance for this indicator will be waived pending the resumption of extensive timber harvesting by the Participants within the DFA.		
References		

## Criterion 3.0 Soil and Water

### 3-1.1 - Level of soil disturbance

Measure 3-1.1	
Target	Results
Percentage of harvested blocks meeting soil disturbance objectives identified in plans. Target of 100 percent (variance of 0%)	Canfor completed no harvesting, mechanical site preparation or road construction activities during the reporting period. Therefore no negative soil disturbance was created. This indicator target is considered achieved.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
None at this point.
References

### 3-1.2 - Level of Downed woody debris

Measure 3-1.2	
Target	Results
Percent of cutblocks reviewed where post harvest coarse woody debris (CWD) levels are within the targets contained in plans. Target of 100% (10%)	Canfor completed no harvesting or road construction activities during the reporting period. Therefore the population of blocks required to meet the target was zero. This indicator target is considered achieved.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
None at this point.
References

**3-2.1.1 - Proportion of watersheds or water management areas with recent stand replacing disturbance – Watersheds**

Measure 3-2.1.1	
Target	Results
Sensitive watersheds that are found to be above peak flow targets will have further assessment done and strategies created for water management prior to harvest within the watershed. Target of 100 percent (0)	Canfor completed no harvesting or road construction activities during the reporting period. Therefore no harvesting occurred in sensitive watersheds. This indicator target is considered achieved.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
<p>Equivalent Clearcut Area for the Fort Nelson TSA was calculated by MacDonald Hydrology Consultants Limited in March 2018.</p> <p>The following excerpt is taken from the report “Climate and hydrologic change assessment for the Fort Nelson TSA” dated March 31, 2018 - <i>On average, ECA across the study area is relatively low, ranging from less than 1% to approximately 25% (see Appendix Section 8.5). The mean ECA for the whole study area is 9% indicating the Fort Nelson TSA is currently largely hydrologically unaltered due to harvest and road development. Visual assessment of the results suggests they are reasonable given that relatively little disturbance has occurred recently across this landscape.</i></p>
References
<p>Climate and hydrologic change assessment for the Fort Nelson TSA dated March 31, 2018 by Dr. Ryan MacDonald.</p>

Figure 4: Fort Nelson TSA Equivalent Clearcut Area

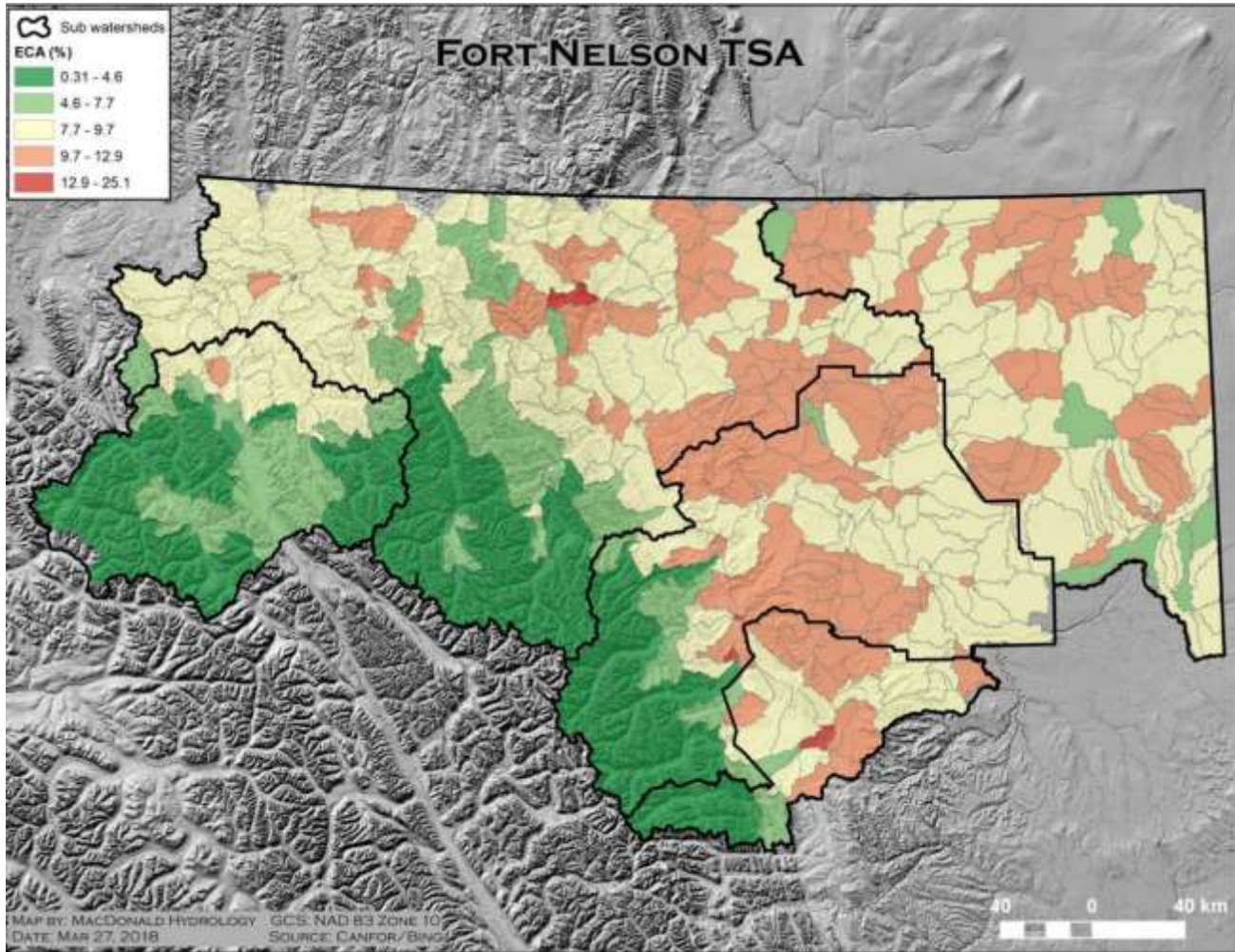


Figure 4 depicts ECA calculated at the scale of 100 km<sup>2</sup> threshold watersheds.

**3-2.1.2 - Proportion of watersheds with recent stand replacing disturbance – Roads and Structures**

Measure 3-2.1.2	
Target	Results
Percentage of high hazard drainage structures on road permits in sensitive watersheds with identified water quality concerns that have mitigative strategies implemented. Target of 100 (0)	Canfor completed no harvesting or road construction activities during the reporting period. Therefore no harvesting or road construction occurred in sensitive watersheds. Road maintenance activities were limited to the re-establishment of cross ditches on deactivated sections of the Pipeline Bypass and Tofte mainline roads. This indicator target is considered achieved.

Target Met		
✓ Yes	No	Pending

**Recommendations and Next Steps**

Prior to resumption of extensive harvest activities, an analysis will be conducted to identify sensitive watersheds within the Fort Nelson DFA. Harvesting conducted in sensitive watersheds utilizing roads held under permit by Canfor will be targeted for assessment of drainage structures as identified in the SFMP, to identify stream crossings considered to be of high potential hazard for sediment delivery to fish bearing streams. Mitigation strategies will be developed for high sedimentation hazard crossing structures. Early in the current harvest shut down, Canfor surrendered the majority of it's road permits for mainline roads to MFLNRORD. These roads were then re-issued to various oil and gas companies, who took over maintenance responsibilities on the roads.

**References**

**Criterion 4.0 Role in Global Ecological Cycles**

**4-1.1.1 - Net carbon uptake – Total Carbon Storage**

**Measure 4-1.1.1**

Target	Results
Maintain or increase the CFS-CBM derived baseline of 1,752 mega-tonnes total ecosystem carbon on the productive CFLB (10%)	The total carbon storage for the Fort Nelson DFA was calculated in 2006 and came out to 1,752 MT of carbon in the DFA. This indicator is considered met as the data from the initial run is still the baseline and believed to be applicable. Timber harvesting activities shut down in 2008.

**Target Met**

✓ Yes	No	Pending
-------	----	---------

**Recommendations and Next Steps**

Analysis completed in 2006, harvesting shut down in Oct 2008. No timber harvesting has occurred since October 2008. Historical average area harvested per year is approximately 4503 ha per year or 0.05% of the DFA. The lack of timber harvesting disturbance that has occurred since the carbon storage and sequestration analysis was completed, (only 2 years of timber harvest) suggests that the carbon analysis does not need to be revised at this time. This analysis uses data tied to inputs developed under Timber Supply Review (TSR) analyses. The next run of the carbon model may be completed in conjunction with the anticipated 2017 TSR analysis. Should new carbon storage data for the DFA become available prior to the TSR, it will be presented within the reporting year report when it was released. The lack of harvesting and road building activities by Canfor has resulted in no reductions in Carbon storage resulting from Canfor's forest management activities. To date of preparation of this report, the Fort Nelson TSR4 analysis and report have not been completed.

**References**

See Table 20: Summary of ecosystem carbon storage in the forested landbase over a 250 year period in Appendix 4 – Criterion 4 Supporting Data for a summary of the data from the carbon analysis report.

**4-1.1.2 - Net carbon uptake – Sequestration rate**

Measure 4-1.1.2	
Target	Results
Maintain or increase the CFS-CBM derived baseline sequestration rate of 0.93 MT carbon per year in the THLB and 0.55 MT carbon per year in the NHLB (10%)	The annual carbon sequestration rate for the Fort Nelson DFA was calculated in 2006 and came out to 0.93 MT per year in the THLB and 0.55 MT per year in the NHLB. This indicator is considered met as the data from the initial run is still the baseline and believed to be applicable. Timber harvesting activities shut down in 2008.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
Analysis completed in 2006, harvesting shut down in Oct 2008. No timber harvesting has occurred since October 2008. Historical average area harvested per year is approximately 4503 ha per year or 0.05% of the DFA. The lack of timber harvesting disturbance that has occurred since the carbon storage and sequestration analysis was completed, (only 2 years of timber harvest) suggests that the carbon analysis does not need to be revised at this time. This analysis uses data tied to inputs developed under Timber Supply Review (TSR) analyses. The next run of the carbon model may be completed in conjunction with the anticipated 2017 TSR analysis. Should new carbon sequestration rate data for the DFA become available as part of the TSR, it would be presented within the reporting year report when it was released. Canfor’s reforestation activities have contributed to maintaining and / or increasing the Carbon sequestration rate. To date of preparation of this report, the Fort Nelson TSR4 analysis and report have not been completed.
References
See Table 21: Average carbon sequestration rate in the forested landbase over a 250 year period in Appendix 4 – Criterion 4 Supporting Data for a summary of the data from the carbon analysis report.

**4-1.2 – Reforestation Success**

Measure 4-1.2	
Target	Results
Average regeneration delay for stands established annually will be 3 years or less (Variance site plan specific).	No stands were required to be established in the last 8 years, as no harvesting has occurred since 2008. Fill planting of previously established stands occurred in 2017 to maintain stocking within target thresholds. This target has been met

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
Cut block stocking will continue to be monitored and fill planting completed, where required to maintain stocking within target thresholds, in order to achieve free growing requirements.

References

--

**4-2.1.1 - Addition and deletions to the forest area**

Measure 4-2.1.1

Target	Results
Percent of gross forested landbase in the DFA converted to non-forest land use through forest management activities. Target of less than 3% of gross forested landbase at any given time (0).	Canfor completed no harvesting or road construction activities during the reporting period, accordingly no activities took place that converted forest land to non forest land use. This indicator target is considered achieved.

Target Met

✓ Yes	No	Pending
-------	----	---------

Recommendations and Next Steps

The baseline data for this indicator was updated in 2018 using TSR4 data.

References

See Appendix 3 Table 16

**4-2.1.2 - Evidence of best efforts to coordinate forest management activities with the oil and gas industry**

Measure 4-2.1.2

Target	Results
<p>A) Share 100% of annual planned block and road construction with the Oil and Gas Commission (0)</p> <p>B) Report out the number of oil and gas referrals for the Fort Nelson DFA responded to by each of the participants</p>	<p>Canfor completed no harvesting or road construction activities during the reporting period, nor did Canfor complete any harvest planning activities. Accordingly, there was no annual operating plan to share with the OGC. This indicator target is considered achieved.</p> <p>During 2017 Canfor received and responded to 3 Fort Nelson based oil and gas project referrals. There were no direct impacts to Canfor interests and no opportunities to coordinate access or forest management activities.</p>

Target Met

✓ Yes	No	Pending
-------	----	---------

Recommendations and Next Steps

Prior to resumption of extensive harvest activities, Canfor will share it's annual harvest plan with the Oil and Gas Commission. Canfor continues to comment on oil and gas project referrals received. See the BCTS Annual Report for the number of referrals responded to by BCTS.

References

A risk assessment of the impact of oil and gas activities on SFM targets was completed in 2012. Activity in the oil and gas sector has decreased significantly since that assessment. As a result of the downturn in the oil and gas activity there is even less risk of oil and gas activity negatively impacting ability of the participants to achieve the SFMP targets.  
See Appendix 3 Figure 6.

**Criterion 5.0 Economic and Social Benefits**

**5-1.1.1 - Quantity and quality of timber and non-timber benefits, products and services produced in the DFA  
- Timber**

Measure 5-1.1.1		
Target	Results	
Proportion of the long term sustainable harvest level that is actually harvested. Percentage of volume harvested annually compared to long term harvest level (AAC) with a target of 100 percent over 5 years (0)	Canfor completed no harvesting or road construction activities during the reporting period. This indicator target is considered pending.	
Target Met		
Yes	No	✓ Pending
Recommendations and Next Steps		
The PRISM has agreed that reporting of the Participants performance for this indicator will be waived pending the resumption of timber harvesting by the Participants within the DFA.		
References		



Figure 5: Canfor Polarboard OSB mill circa 2003.



**5-1.1.2 - Quantity and quality of timber and non-timber benefits, products and services provided in the DFA – Non-Timber**

Measure 5-1.1.2	
Target	Results
Conformance with strategies for non-timber benefits identified in plans. Target of 100 percent compliance (0).	Canfor completed no harvesting or road construction activities during the reporting period. Brushing and weeding activities were reviewed with First Nations and no important sites were identified. As such no plans were implemented that required strategies for provision of non-timber benefits. This indicator target is considered met.

Target Met		
✓ Yes	No	Pending

**Recommendations and Next Steps**

**References**

**5-1.1.3 - Participants forest management activities will not negatively impact established recreational sites and trails**

Measure 5-1.1.3	
Target	Results
100 percent of Participants road building and harvesting activities will take place outside of established recreation sites and trails. A variance is allowed in the event there is a compelling forest health or safety concern and that appropriate permissions are obtained.	Canfor completed no harvesting or road construction activities during the reporting period. As such there was no potential or actual impact to established recreation sites and trails. The indicator is considered achieved.

Target Met		
✓ Yes	No	Pending

**Recommendations and Next Steps**

A variance, if required, would be requested from the appropriate designated decision maker.

**References**

See Table 22: Recreation sites and trails in the Fort Nelson DFA in Appendix 5 – Criterion 5 Supporting Data for a summary of Recreation sites and trails identified in the SFMP. This list of Recreation sites and trails was updated on data provided by the MFLNRORD in 2016.

**5-1.1.4 - Forest management activities will be consistent with Visual Quality Objectives (VQOs)**

Measure 5-1.1.4	
Target	Results
100 percent of Participants forest operations will be consistent with the established VQOs for the Fort Nelson DFA. A variance is allowed in the event there is a compelling forest health or safety concern, and the appropriate permissions are obtained.	Canfor completed no harvesting or road construction activities during the reporting period. As such there was no potential or actual impact to established VQOs. The indicator is considered achieved.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
A variance, if required, would be requested from the appropriate designated decision maker.
References
See Figure 10: Fort Nelson Visual Quality Objectives, Table 23: Visual Quality Objective Class, Table 24: Max Allowable Disturbance Percentage by VQO Class, Table 25: Percent Denudation for Established VQOs in Appendix 5 – Criterion 5 Supporting Data, for a summary of the background data from the 2011 SFMP. There have been no revisions to the Fort Nelson visual quality objectives since 2002.

**5-2.1.1 - Levels of investment in initiatives that contribute to community sustainability**

Measure 5-2.1.1	
Target	Results
Percent of total budget spent in local communities on a 5 year rolling average. This will be a report out indicator until the PAG decides on an acceptable target and variance. Annual expenditures will also be reported out in this indicator	Of Canfor’s 2017 planning and admin budget for Fort Nelson 62% (\$215,935) was spent on local suppliers. Of Canfor’s 2017 silviculture budget 41% (\$407,047) was spent on local suppliers. Of Canfor’s 2017 road maintenance budget 91% (\$14,435) was spent on local suppliers. Overall, 47% (\$637,418) of Canfor’s 2017 budget was spent on local suppliers. The 5 year rolling average is 41.0%

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
None at this point.
References
See Appendix 5 Table 27.

**5-2.1.2 - Amount of stumpage paid in the Fort Nelson DFA**

Measure 5-2.1.2		
Target	Results	
This is a report out indicator requested by the Public Advisory Group to show what revenues are being generated by the forest resource (timber extraction) in the DFA. As such there is no target or variance associated with it.	Canfor completed no harvesting or road construction activities during the reporting period. As such there was no stumpage charged and none paid in the reporting period. The indicator is considered to have been achieved. Canfor paid \$204,875 in forest rent to the government of BC.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

**5-2.2 - Level of investment in training and skills development**

Measure 5-2.2		
Target	Results	
Training in environmental and safety procedures in compliance with company training plans. Target of 100 percent of company employees will have both environmental and safety training (5).	In 2016 Canfor had 4 woodlands employees with duties in Fort Nelson. All 4 employees received required safety and environmental training. This indicator target is considered to have been met.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

### 5-2.3 - Level of direct and indirect employment

Measure 5-2.3	
Target	Results
Maintain current level of direct and indirect employment as expressed as a factor of current harvest level (or using indirect job multipliers derived from the last TSR (variance of 10%))	During the reporting period Canfor had a total of 4 staff assigned to Fort Nelson duties. A total of 2.4 person years of employment were created through Canfor's planning and reforestation activities in Fort Nelson. The TSR employment multiplier of 1.25 yields a total of 5 direct and indirect jobs. This indicator target is considered to have been achieved.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
With the sale of Canfor's panel manufacturing equipment in the spring of 2013, the 14 manufacturing staff assigned to Canfor Fort Nelson had their employment with the Company terminated. As of the writing of the 2013 report, Canfor had no manufacturing staff in Fort Nelson. At the time of preparation of the 2013 report Canfor had and continues to have 4 employees (Woodlands) with duties in Fort Nelson. This became the baseline level of direct employment to be maintained in the 2014 and subsequent reporting years. With the 2018 reporting year, reliance on harvest volume based indicators of indirect employment will not occur, rather only direct employment will be reported. This will result in an underestimation of the number of indirect jobs created by the road maintenance and silviculture activities completed by contractors for Canfor.
References

### 5-2.4 - Level of Aboriginal participation in the forest economy

Measure 5-2.4	
Target	Results
Number of opportunities compared to the three year rolling average. There will be no set target for this indicator as the objective is to ensure that some opportunities are being made available to first nations within the DFA. No variance is prescribed with this indicator	Canfor maintained 1 MOU with Prophet River First Nation. The provisions of the MOU are considered "on hold" until harvest operations resume by Canfor. Canfor did not tender any contracts for work in Fort Nelson in 2016. As this is a report out indicator it is considered to have been met.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
None at this point.
References

## Criterion 6.0 Societies Responsibilities

### 6-1.1 - Evidence of good understanding of the nature of Aboriginal title and rights

Measure 6-1.1		
Target	Results	
100% of Canfor Forest Management Group (Fort Nelson Woodlands) employees and 100% of all BCTS Fort Nelson Field Team staff will receive First Nations awareness training (variance of 0%)	All of Canfor's four Fort Nelson Woodlands employees received First Nations awareness training. This indicator is not considered to have been achieved.	
Target Met		
Yes	✓ No	Pending
Recommendations and Next Steps		
Canfor's aboriginal awareness training module was placed on the Eclipse training website in the form of a self administered training module in 2012.		
References		

### 6-1.2 - Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans

Measure 6-1.2		
Target	Results	
100% of management plans exhibit evidence of best efforts to obtain acceptance by aboriginal communities	In the reporting period, Notices of Intent to Treat were shared with affected First Nations (Prophet River, Fort Nelson, Fort Liard) and invited to meet with Canfor reps to review the plans. No block specific comments or questions from First Nation community members or trappers were received. No harvest plans were developed or shared during the 2017 reporting period. This indicator is considered to have been met.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

**6-1.3 - Level of Management and/or Protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur**

Measure 6-1.3		
Target	Results	
100 percent of forest operations in conformance with operational / site plans developed to address Aboriginal forest values, knowledge and uses (variance of 0)	Canfor completed no harvesting or road construction activities during the reporting period. Canfor's brushing activities were completed in conformance with site plans & comments received in response to the Pesticide Management Plan (PMP) and Notice of Intent to Treat (NIT). No site specific comments were received from First Nations regarding the blocks proposed to be treated with herbicide. The indicator is achieved.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

**6-2.1 - Evidence of understanding and use of Aboriginal knowledge through the engagement of willing Aboriginal communities, using a process that identifies and manages culturally important resources and values**

Measure 6-2.1		
Target	Results	
100 percent of identified Aboriginal forest values and uses considered in the forestry planning process	Canfor did not complete any harvesting or road construction activities during the reporting period. Canfor's brushing activities were completed in conformance with site plans and comments received from First Nations in response to the PMP and NIT consultation. The indicator is achieved.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
Inherent in the SFMP description of this indicator is the understanding that the consideration of Aboriginal forest values and uses in forestry planning includes addressing the protection of these items in forest plans. Every affected trapper/guide/First Nation was notified of planned 2017 herbicide treatments, and in 2014 First Nations were contacted to comment on the PMP; any concerns are addressed prior to vegetation management activity taking place..		
References		

**6-3.1 - Evidence that the organization has co-operated with other forest dependent businesses, forest users and the local community to strengthen and diversify the local economy**

Measure 6-3.1		
Target	Results	
Report out the number of purchase/Sale/Trade relationships with local forest dependent businesses where primary forest products and by-products are bought, sold or traded (Variance not applicable).	Canfor maintained an inactive purchase relationship with BCTS and other industrial suppliers in the Fort Nelson area, due to the indefinite closure of Canfor’s mills. The indicator is considered to have been achieved.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

**6-3.2 - Evidence of co-operation with DFA related workers to improve and enhance safety standards, procedures and outcomes in all DFA workplaces and affected communities**

Measure 6-3.2		
Target	Results	
100 percent of Participants and their contractors and licensees (in the case of BCTS) will implement and maintain a certified safety program (10%).	Canfor maintained Safe Companies Certification in the reporting period. Canfor did not complete any harvesting or road construction activities during the reporting period. Silviculture contractors working for Canfor in the woods during the reporting period maintained certified safety programs. This indicator is considered to have been achieved.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

**6-3.3 - Evidence that a worker safety program has been implemented and is periodically reviewed and improved.**

Measure 6-3.3		
Target	Results	
A) 100 Percent of non-conformities found during external audits will have an action plan developed and implemented in a manner and timeframe acceptable to the auditor (0).	A) Canfor successfully underwent a surveillance audit of its safety certification, which was maintained during the reporting period. No non conformities were identified.	
B) An annual management review of the safety program will be completed (0)	B) A management review of Canfor’s 2017 Forest Management Group safety program was completed.	
This indicator is considered to have been achieved.		
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		

**6-4.1 - Level of Participant and PRISM satisfaction with the public participation process**

Measure 6-4.1		
Target	Results	
80 percent or greater level of satisfaction indicated by a PRISM established and maintained satisfaction survey (10%)	The PRISM public participation process satisfaction survey was administered January 18, 2018 PAG meeting. Five surveys were returned and the average satisfaction level with the Public advisory process was rated as 5.0 out of 5. Therefore this indicator is considered to be met.	
Target Met		
✓ Yes	No	Pending
Recommendations and Next Steps		
None at this point.		
References		
See Appendix 6 Table 30: Summary of 2017 Public Participation Process Satisfaction Survey		



**6-4.2 - Evidence of efforts to promote capacity and meaningful participation in general**

Measure 6-4.2	
Target	Results
1 or more educational opportunities for information/training are delivered to the PAG Annually	<p>3 Educational opportunities were provided to the PAG during the reporting period:</p> <ul style="list-style-type: none"> <li>• October 17<sup>th</sup>, 2017 PRISM Meeting                             <ul style="list-style-type: none"> <li>a) Update on the Boreal Caribou Implementation Plan – Megan Watters</li> <li>b) TSR 4 presentation – Mary Vizslai-Beale</li> </ul> </li> <li>• March 9<sup>th</sup>, 2017 PRISM meeting                             <ul style="list-style-type: none"> <li>a) Update on the Northern Rockies Regional Municipality Community Forest Agreement – Jack Stevenson</li> </ul> </li> </ul> <p>This indicator is considered to have been met.</p>

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
None at this point.

References

**6-4.3 - Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities**

Measure 6-4.3	
Target	Results
100 percent of management plans exhibit evidence of best efforts to obtain acceptance by Aboriginal communities (0%)	<p>During the reporting period no harvesting plans were shared, however Notices of Intent to Treat were shared with affected First Nations (Prophet River &amp; Fort Nelson First Nations) and invited to meet with Canfor reps to review the plans. No block specific comments were provided regarding the NIT. This indicator is considered to have been met.</p>

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
None at this point.

References



Figure 6 PRISM Discussion of Fire Impacts, Field Tour June 2016

**6-5.1 - Number of people reached through educational outreach**

Measure 6-5.1	
Target	Results
50 or greater people to whom educational opportunities have been offered (variance of -10 people)	<p>Following is a summary of the Participants' educational outreach activities and the attendance:</p> <ul style="list-style-type: none"> <li>• May Trade Show – 33 people</li> <li>• Sparks community forest field tour – 14 people</li> <li>• R. L. Angus planting demonstration – 13 people</li> <li>• PRISM Summer Field Tour – 6 people</li> <li>• October 17<sup>th</sup>, 2017 PRISM Meeting – 6 people</li> <li>• January 18<sup>th</sup>, 2018 PRISM Meeting – 5 people</li> </ul> <p>Total People reached via educational outreach – <b><u>77 people</u></b> This indicator is considered to have been met.</p>

Target Met		
✓ Yes	No	Pending

**Recommendations and Next Steps**  
This indicator will be merged with indicator 6-4.3 for the 2018 reporting year. This change was made to the 2018 SFMP.

**References**



Figure 7 PRISM Field Tour June 2016

**6-5.2 - Availability of summary information on issues of concern to the public**

Measure 6-5.2	
Target	Results
Previous years' annual report must be made available to the public via the web prior to March 31 <sup>st</sup> of the current reporting year (no variance).	Canfor posted the 2016 annual report to it's external website. The 2016 SFM annual report was submitted to the Fort Nelson public library. This indicator has been met.

Target Met		
✓ Yes	No	Pending

Recommendations and Next Steps
The 2017 SFM annual report will be posted to Canfor's external website and a copy will be provided to the Fort Nelson public library.

References



**Figure 8 Toad River, Fort Nelson Defined Forest Area.**

Questions regarding the 2017 SFM annual report may be directed to Canfor:  
Darrell Regimbald RPF  
Certification Specialist  
250 787-3651

## **Appendix 1 – SFMP Change Tables**

Table 2: Summary of Changes to Criteria from the 2004 SFMP to the 2011 SFMP

Table 3: Summary of changes from 2004 Measures to 2011 Indicators

Table 4: Dropped Measures from the Amended 2004 SFMP

**Table 2: Summary of Changes to Criteria from the 2004 SFMP to the 2011 SFMP**

<b>2004 Criteria</b>	<b>CSA Z809-08 Criteria</b>
C1 Biological richness and its associated values are sustained in the defined forest area (DFA)	C1 Biological diversity
C 2. The productive capability of forest ecosystems within the Timber Harvesting Land Base (THLB) are sustained	C2 Ecosystem Condition and Productivity
C 3. Forest ecosystem contributions to global ecological cycles are sustained within the DFA	C3 Soil and Water
C 4. The flow of economic benefits from forests through the forest industry is sustained	C4 Role in Global Ecological Cycles
C 5. The flow of marketed non-timber economic benefits from forests is sustained	C5 Economic and Social Benefits
C 6. Forest management contributes to a diversified local economy	C6 Society's responsibility
C 7. Decisions guiding forest management on the DFA are informed by and respond to a wide range of social and cultural values	
C 8. Forest management sustains or enhances the cultural (material and economic), health (physical and spiritual) and capacity benefits that First Nations derive from forest resources	
C 9. Forest management sustains ongoing opportunities for a range of quality of life benefits	

**Table 3: Summary of changes from 2004 Measures to 2011 Indicators**

CSA Z809-08 Core indicator or Local Indicator	Measure replaced from the 2008 update of the 2004 plan
1.1.1 Ecosystem area by type	1-1.1 Ecosystem Representation
1.1.2 Forest area by type or species composition	1-2.1 Habitat elements
1.1.3 Forest area by seral stage or age class	1-1.2 Seral stage
1.1.4.1 Degree of within stand structural retention – WTP percentage	1-2.1 Habitat elements
1.1.4.2 Degree of within stand structural retention – Dispersed Retention	1-2.1 Habitat elements
1.1.4.3 Degree of within stand structural retention – Riparian Management	1-2.1 Habitat elements
1.1.5 Shrub Habitat	1-2.1 Habitat elements
1.2.1 Degree of habitat protection for focal species including species at risk	1-3.1 Vertebrate species populations 1-3.2 SAR management strategies 1-4.1 Operations in parks, reserves and PA's 1-4.2 Special sites of biological significance 1-4.3 Management activities consistent with the Muskwa-Kechika management area 1-4.4 Management activities consistent with legal objectives
1.2.2 Degree of suitable habitat in the long term for selected focal species including species at risk	1-2.1 Habitat elements 1-3.1 Vertebrate species populations 1-4.1 Operations in parks, reserves and protected areas 1-4.2 Special sites of biological significance 1-4.3 Management activities consistent with the Muskwa-Kechika management area 1-4.4 Management activities consistent with legal objectives
1.2.3 Proportion of regeneration comprised of native species	1-6.1 Conifer seed use in accordance with regulation 1-6.2 Aspen regeneration – Natural regeneration
1.3.1 Percentage of stands artificially regenerated that are free of genetically modified organisms	New Measure with no equivalent from the older plans
1.4.1 Proportion of identified sites with implemented management strategies	1-4.1 Operations in parks, reserves and protected areas 1-4.2 Special site of biological significance 1-4.4 Management activities consistent with legal objectives 9-3.1 compliance with documented strategies
1.4.2 Protection of identified sacred and culturally important sites	8-2.1 Percentage of specific/confirmed culturally important sites identified by first nations
2.1.1.1 Reforestation success – Regen Delay	2-3.1 Regeneration delay 2-3.2 Compliance with regeneration standards
2.1.1.2 Reforestation success – Free Growing	2-3.3 Compliance with free growing
2.1.1.3 Percentage of silviculture obligation areas with significant detected forest health agents	4-6.2 Management strategies for damaging events or agents

CSA Z809-08 Core indicator or Local Indicator	Measure replaced from the 2008 update of the 2004 plan
which have treatment plans	
2.1.1.4 Evidence of efforts being made to manage known significant forest health damaging agents	4-6.1 Assessment of damaging events or agents
2.2.1 Addition and deletions to the forest area	2-2.1 forest converted to non-forest use 2-2.3 Landslides
2.2.2 Percentage of long term sustainable harvest level that is actually harvested	4-1.1 Harvested Volume 4-1.2 Timber supply certainty
3.1.1 Level of Soil disturbance	2.-2.2 Long term detrimental soil disturbance
3.1.2 Level of downed woody debris	1-2.1 Habitat elements 2-1.2 Coarse woody debris
3.2.1.1 Proportion of watershed or water management areas with recent stand replacing disturbance - Watersheds	1-5.1 Stream crossings – WQCR 1-5.2 Stream crossings – installed/removed to design/standard 1-5.3 Stream crossings - inspections
3.2.1.2 Proportion of watershed or water management areas with recent stand replacing disturbance - Roads	1-5.1 Stream crossings – WQCR 1-5.2 Stream crossings – installed/removed to design/standard 1-5.3 Stream crossings - inspections
4.1.1.1 Net Carbon Uptake – Total Carbon Storage	3-1.1 Carbon stored in trees and non-tree vegetation <b>Note this measure was pulled directly across</b>
4.1.1.2 Net Carbon Uptake – Carbon sequestration rate	3-3.1 Carbon Sequestration <b>Note this measure was pulled directly across</b>
4.1.2 Reforestation success	As per indicator 2.1.1
4.2.1.1 Additions and deletions from to the forest area	As per indicator 2.2.1
4.2.1.2 Evidence of best efforts to coordinate forest management activities with the oil and gas industry	2-2.4 Information requests – oil and gas industry
5.1.1.1 Quantity and Quality of timber and non-timber benefits, products and services produced in the DFA	As per indicator 2.2.2
5.1.1.2 Quantity and Quality of timber and non-timber benefits, products and services produced in the DFA	5-1.1 Potential for marketed non-timber resource benefits 5-1.2 Amount of marketed non-timber resource activity
5.1.1.3 Participants forest management activities will not negatively impact established recreational sites and trails	9-1.1 Number of forest recreation sites/facilities maintained
5.1.1.4 Forest management activities will be consistent with Visual Quality Objectives (VQO's)	9-2.1 Compliance with Visual Quality Objectives
5.2.1.1 Level of investment in initiatives that contribute to community sustainability	New Measure with no equivalent from the older plans
5.2.1.2 Amount of stumpage paid in the Fort Nelson DFA	4-3.1 Fees paid by the Forest Industry
5.2.2 Level of investment in training and skills development	New Measure with no equivalent from the older plans



CSA Z809-08 Core indicator or Local Indicator	Measure replaced from the 2008 update of the 2004 plan
5.2.3 Level of direct and indirect employment	4-2.1 Direct employment in the forest industry 4-2.2 Indirect and induced employment
5.2.4 Level of Aboriginal participation in the forest economy	4-4.1 Opportunities for first nations 4-4.2 Opportunities for first nations (BCTS)
6.1.1 Evidence of good understanding of the nature of Aboriginal title and rights	New Measure with no equivalent from the older plans
6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans	8-1.1 Percentage of cutblocks where information sharing took place 8-2.1 Access to resources for first nations 8-3.1 First nations opportunities to comment 8-3.2 Percentage of archaeological impact assessments sought
6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering, Etc.) occur	8-1.1 Percentage of cutblocks where information sharing took place 8-2.1 Access to resources for first nations 8-3.1 First nations opportunities to comment
6.2.1 Evidence of understanding and use of Aboriginal knowledge through the engagement of willing Aboriginal communities, using a process that identifies and manages culturally important resources and values	8-1.1 Percentage of cutblocks where information sharing took place 8-2.1 Access to resources for first nations
6.3.1 Evidence that the organization has co-operated with other forest dependant businesses, forest users and the local community to strengthen and diversify the local economy	New Measure with no equivalent from the older plans
6.3.2 Evidence of co-operation with DFA related workers and their unions to improve and enhance safety standards, procedures and outcomes in all DFA workplaces and affected communities	9-4.1 Safe company registration and certification 9-4.2 safety incidences 9-4.3 Number of serious injuries 9-4.4 Number of fatalities
6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved	9-4.1 Safe company registration and certification
6.4.1 Level of Participant satisfaction with the public process	7-1.3 Effective public advisory group 7-1.4 Equitable and inclusive deliberation process
6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general	7-1.2 Methods used for public communication 7-1.3 Effective public advisory group 7-1.5 perceptions of members of the Fort Nelson public advisory group
6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities	New Measure with no equivalent from the older plans
6.5.1 Number of people reached through educational outreach	7-1.2 Methods used for public communication
6.5.2 Availability of summary information on issues of concern to the public	New Measure with no equivalent from the older plans

**Table 4: Dropped Measures from the Amended 2004 SFMP**

Dropped Measure	Reason for deletion
2-1.1 Site index	This measure was dropped because of the high variability in the methodology of measuring Site Index for any given site. There are three methods for calculating SI, and there is no way of knowing how the original SI was derived. This makes any comparison to a newly calculated SI very difficult to reconcile.
2-4.1 Treatment plans for natural disturbance events	As natural disturbance events are not under the control of the Participants, neither is the legal responsibility for management of these events which are not triggered by the actions of the participants. The treatment of such areas would have to be voluntary. Such losses to natural disturbance would be taken into account by the TSR process, resulting in downward pressure on AAC in the short term.
2-4.2 Percent of catastrophic natural disturbance events due to forestry activities	If forestry activities were to result in a catastrophic natural disturbance or to exacerbate a natural disturbance, the Participants would be required to help with the mitigation as a matter of law.
4-2.3 Dollar value of BCTS timber sales and total timber volume advertised by BCTS	This measure did not really fit in with any of the elements from the 6 CSA criteria.
4-3.2 Personal income taxes paid	This measure did not fit in with any of the elements from the 6 CSA criteria, and was considered inappropriate by the Participants as it was reporting personal information.
4-5.1 Perceptions of Canfor and BCTS	This measure did not really fit in with any of the elements from the 6 CSA criteria.
4-5.2 Competitive primary milling facility	This measure was removed as the presence of a competitive primary milling facility is controlled by the lumber market, which is beyond the control of the Participants to influence.
6-1.1 Employments by broad sector	This measure is out of the scope of control of the Participants and as such not appropriate for the SFMP
6-1.2 Employment by industry	This measure is out of the scope of control of the Participants and as such not appropriate for the SFMP
7-1.1 Stakeholder database	This measure did not really fit in with any of the elements from the 6 CSA criteria. The stakeholder database has been retained as a tool to be used by the participants to assist in efforts to inform the public about the SFM activities of the participants.

## **Appendix 2 – Criterion 1 Supporting Data**

Table 5: Rare and Uncommon Ecosystem Groups in the Fort Nelson DFA

Table 6: Forest Cover Type (2011 dataset)

Table 8: Required Percentage of Retention in the DFA

Table 9: Current Percentage of Old Seral Stage by NDU

Table 10: Current Stand Level Retention Percentage

Figure 9: Natural Disturbance Units of the Fort Nelson DFA

**Table 5: Rare and Uncommon Ecosystem Groups in the Fort Nelson DFA\***

Rare Ecosystems in the NHLB	Forest Area (ha)
Group #	
7 - BWBS dk1 (02), SBS mk1 (03), SBS mk2 (02)	532
73 - BWBS dk1 (06)	2,397
71 - BWBS dk1 (07)	704
74 - BWBS dk1 (08)	74
69 - SWB mk (09)	346
Uncommon Ecosystems in the NHLB	Ecosystem Description
3 - SWB mk (02)	5,695
36 - ESSF mc (05)	8,158

\*from 2011 ecosystem analysis conducted by Canfor

**Table 6: Forest Cover Type (2011 dataset)\***

Cover Type	CFLB (ha)	THLB (ha)	NHLB (ha)	Baseline % of CFLB
Pure hardwoods	1,071,994	657,375	414,619	19.0%
Hardwood-leading mixed	452,116	205,060	247,055	8.0%
Pure conifers	3,583,672	1,123,399	2,460,273	63.6%
Conifer-leading mixed	532,327	302,898	229,428	9.4%
<b>Total Area</b>	<b>5,640,109</b>	<b>2,288,732</b>	<b>3,351,375</b>	<b>100%</b>

\*From 2011 SFMP analysis.

**Table 7: Forest Cover Type (2018 dataset)\*\***

Cover Type	CFLB (ha)	THLB (ha)	NHLB (ha)	Baseline % of CFLB
Pure hardwoods	1,017,415	493,102	524,312	17.8%
Hardwood-leading mixed	452,291	175,449	276,841	7.9%
Pure conifers	1,559,604	639,747	919,858	27.4%
Conifer-leading mixed	279,076	138,773	140,303	4.9%
Immature	43,995	39,442	4553	0.8%
NP	2,348,187	70,041	2,278,146	41.2%
<b>Total Area</b>	<b>5,700,568</b>	<b>1,556,554</b>	<b>4,144,013</b>	<b>100%</b>

\*\*From 2018 SFM analysis using updated TSR3 THLB database.

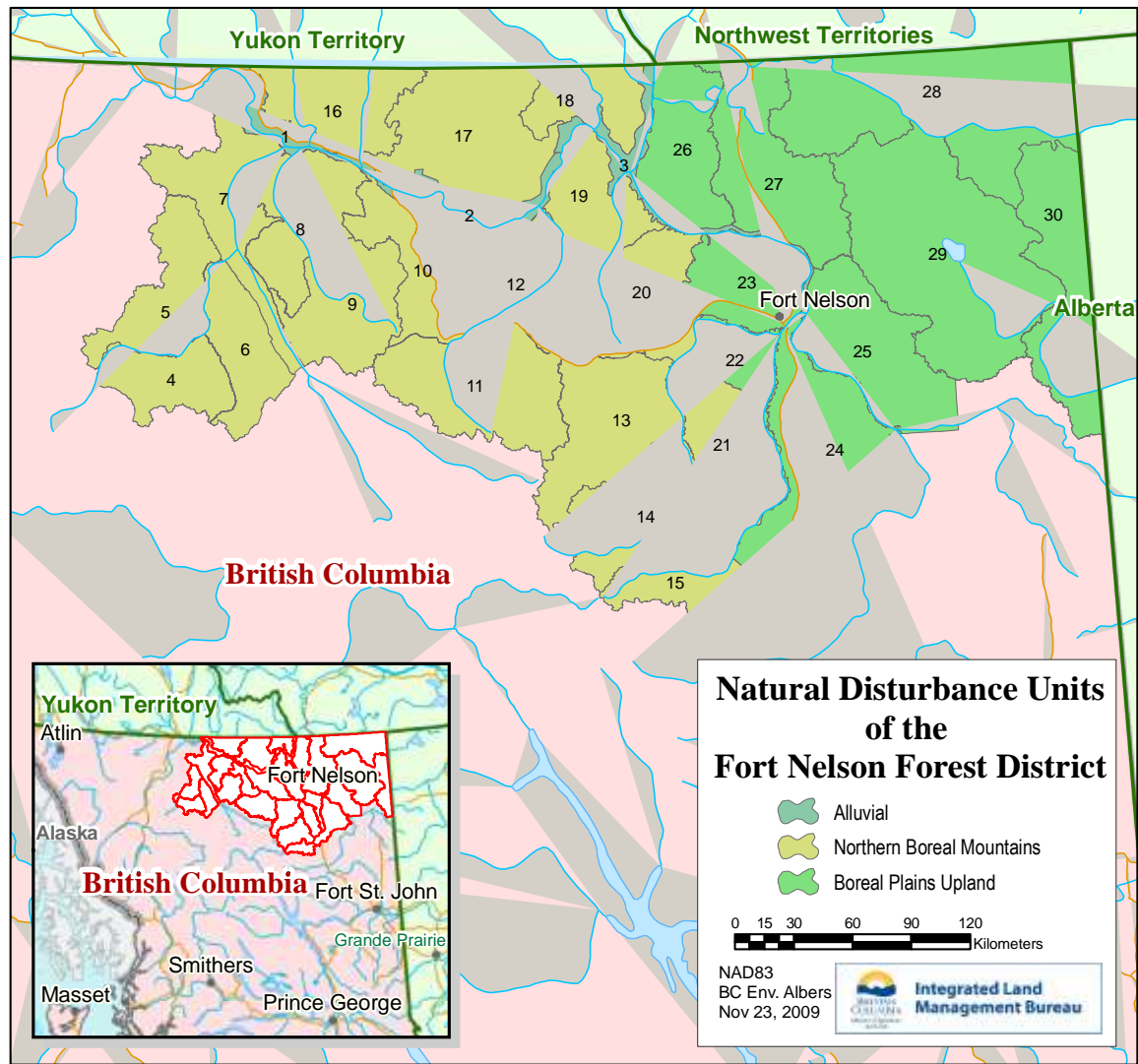
The tables above illustrate the cover type current condition for the Fort Nelson DFA by crown forest land base. The 2011 THLB dataset did not remove immature and NP areas from the species area calculations. The THLB dataset used in the 2018 analysis has removed immature and NP area from the species area calculations. Unfortunately as a result, a direct comparison of the results of the 2 analyses cannot be made. As shown, pure conifers continue to comprise the most of the land base. These distributions are not expected to change as the regeneration assumptions in Fort Nelson will maintain the same cover type distribution as currently exists. Of note no timber harvesting has been conducted in Fort Nelson since 2008.

Table 8: Required Percentage of Retention in the DFA\*

Natural Disturbance Unit	Landscape Units	Age-of-old	Minimum % of CFLB retained as Old Forest
Alluvial	1 Liard River 2 Liard River Corridor Park 3 Nelson Forks	Conifer 140 Deciduous 100	44
Northern Boreal Mountains	4 Sharktooth 5 Major Hart 6 Boreal 7 Kechika 8 Rabbit 9 Netson 10 Muncho 11 Churchill 12 Sulpher/8 Mile 13 Tuchodi 14 Gatho 15 Prophet 16 Smith 17 Hyland 18 Beaver 19 Irene 20 Kleo 21 Holden	140	37
Boreal Plains Uplands	22 Klowee 23 Cridland 24 Klua 25 Clarke 26 Sandy 27 Kwigana 28 Petitot 29 Kotcho 30 Shekilie	Conifer 140 Deciduous 100	17

\*from 2010 Fort Nelson Non Spatial Landscape Biodiversity Objectives Order.

**Figure 9: Natural Disturbance Units of the Fort Nelson DFA\***



\*from 2010 Fort Nelson Non Spatial Landscape Biodiversity Objectives Order.

**Table 9: Current Percentage of Old Seral Stage by NDU and LU\***

NDU & LU	< 40yrs		40-100yrs		100-140yrs		>140yrs		Target	Surplus / Deficit	Total Forested area
	(ha)	%	(ha)	%	(ha)	%	(ha)	%	%	(ha)	(ha)
<b>Conifer &amp; Deciduous</b>											
<b>Northern Boreal Mountains NDU</b>											
Beaver	9,952	9%	16,878	16%	8,097	8%	71,952	67%	37%	32,407	106,879
Boreal	0	0%	13,625	28%	18	0%	35,647	72%	37%	17,410	49,290
Churchill	66	0%	15,880	37%	449	1%	27,029	62%	37%	10,962	43,424
Gathto	1,574	1%	62,748	57%	2,734	2%	42,790	39%	37%	2,147	109,846
Holden	9,484	6%	98,416	67%	3,930	3%	36,084	24%	37%	-18,645	147,915
Hyland	12,833	6%	115,199	50%	8,087	4%	94,372	41%	37%	9,090	230,491
Irene	1,033	1%	12,217	12%	9,569	9%	82,983	78%	37%	43,836	105,801
Kechika	35,821	13%	82,785	30%	5,689	2%	147,665	54%	37%	47,040	271,959
Kledo	4,651	4%	39,306	30%	12,173	9%	73,173	57%	37%	25,331	129,303
Major Hart	1,843	2%	31,597	34%	1,212	1%	59,194	63%	37%	24,471	93,847
Muncho	120	0%	45,031	70%	161	0%	19,383	30%	37%	-4,554	64,695
Netson	1,492	1%	15,983	15%	1,165	1%	90,210	83%	37%	49,935	108,851
Prophet	0	0%	8,743	24%	563	2%	27,819	75%	37%	14,082	37,125
Rabbit	6,098	3%	143,722	68%	300	0%	60,785	29%	37%	-17,250	210,905
Sharktooth	627	2%	4,073	14%	54	0%	24,647	84%	37%	13,769	29,401
Smith	42,920	19%	116,683	52%	14	0%	64,399	29%	37%	-18,487	224,017
Sulpher/8mile	7,972	5%	54,968	35%	5,182	3%	89,933	57%	37%	31,453	158,054
Tuchodi	833	1%	45,995	53%	1,923	2%	38,446	44%	37%	6,183	87,197
<b>Northern Boreal Mountains Total</b>	<b>137,320</b>	<b>6%</b>	<b>923,849</b>	<b>42%</b>	<b>61,321</b>	<b>3%</b>	<b>1,086,511</b>	<b>49%</b>	37%	<b>269,181</b>	<b>2,209,001</b>
<b>Coniferous</b>											
<b>Alluvial NDU</b>											
Liard River	26,161	43%	14,707	24%	0	0%	19,649	32%	44%	-6,979	60,518
Liard River Corridor Park	371	1%	14,097	47%	0	0%	15,499	52%	44%	2,314	29,967
Nelson Forks	6,073	16%	4,645	12%	0	0%	26,647	71%	44%	10,206	37,365
<b>Alluvial Conifer Total</b>	<b>32,606</b>	<b>26%</b>	<b>33,449</b>	<b>26%</b>	<b>0</b>	<b>0%</b>	<b>61,795</b>	<b>48%</b>	44%	<b>5,541</b>	<b>127,850</b>
<b>Deciduous</b>											
<b>Alluvial NDU</b>											
Liard River	8,700	75%	421	4%	0	0%	2,549	22%	44%	-2,586	11,670
Liard River Corridor Park	1,893	6%	11,960	37%	0	0%	18,857	58%	44%	4,465	32,710
Nelson Forks	4,971	11%	10,610	22%	0	0%	31,592	67%	44%	10,836	47,174
<b>Alluvial Deciduous Total</b>	<b>15,564</b>	<b>17%</b>	<b>22,991</b>	<b>25%</b>	<b>0</b>	<b>0%</b>	<b>52,998</b>	<b>58%</b>	44%	<b>12,715</b>	<b>91,553</b>
<b>Coniferous</b>											

NDU & LU	< 40yrs		40-100yrs		100-140yrs		>140yrs		Target	Surplus / Deficit	Total Forested area
	(ha)	%	(ha)	%	(ha)	%	(ha)	%	%	(ha)	(ha)
<b>Boreal Plains NDU</b>											
Clark	1,107	2%	25,497	53%	0	0%	21,610	45%	17%	13,414	48,214
Cridland	7,151	19%	10,619	29%	0	0%	19,484	52%	17%	13,151	37,254
Kiwigana	1,224	2%	42,590	60%	0	0%	27,134	38%	17%	15,073	70,949
Klowee	10,555	23%	13,823	30%	0	0%	22,272	48%	17%	14,341	46,650
Klua	2,402	3%	40,324	48%	0	0%	41,608	49%	17%	27,271	84,334
Kotcho	4,119	3%	86,465	67%	0	0%	37,706	29%	17%	15,897	128,290
Petitot	289	0%	70,388	75%	0	0%	22,647	24%	17%	6,782	93,324
Sandy	2,578	6%	23,109	53%	0	0%	17,950	41%	17%	10,532	43,638
Shekilie	2,331	4%	41,513	64%	0	0%	21,253	33%	17%	10,187	65,097
<b>Boreal Plains Conifer Total</b>	<b>31,757</b>	<b>5%</b>	<b>354,329</b>	<b>57%</b>	<b>0</b>	<b>0%</b>	<b>231,664</b>	<b>38%</b>	17%	<b>126,647</b>	<b>617,750</b>
<b>Deciduous</b>											
<b>Boreal Plains NDU</b>											
Clark	3,270	3%	77,337	72%	0	0%	26,086	24%	17%	7,948	106,692
Cridland	5,279	6%	28,731	35%	0	0%	47,935	58%	17%	34,004	81,945
Kiwigana	1,742	1%	72,538	61%	0	0%	44,461	37%	17%	24,275	118,742
Klowee	10,961	17%	17,841	28%	0	0%	34,978	55%	17%	24,135	63,780
Klua	4,909	5%	60,836	58%	0	0%	39,643	38%	17%	21,727	105,388
Kotcho	9,001	5%	145,822	86%	0	0%	15,637	9%	17%	-13,341	170,461
Petitot	616	1%	59,168	84%	0	0%	11,024	16%	17%	-1,013	70,808
Sandy	2,405	3%	36,368	50%	0	0%	34,650	47%	17%	22,168	73,423
Shekilie	17,176	15%	94,243	83%	0	0%	2,371	2%	17%	-16,973	113,790
<b>Boreal Plains Deciduous Total</b>	<b>55,360</b>	<b>6%</b>	<b>592,884</b>	<b>66%</b>	<b>0</b>	<b>0%</b>	<b>256,785</b>	<b>28%</b>	17%	<b>102,930</b>	<b>905,029</b>

\*From 2016 SFMP seral analysis.



**Table 10: Current Stand Level Retention Percentage\***

Canfor			BCTS		
LU #	% THLB in WTP	FSP Retention Target %	LU #	% THLB in WTP	FSP Retention Target %
4	5.6	3	9	9.30	3
9	5.4	3	12	4.56	3
10	12.36	4	14	5.05	5
11	10.3	5	15	6.73	6
12	10.4	3	16	8.71	4
14	8.8	5	17	4.38	2
15	9.1	6	19	5.03	4
16	7.8	4	20	9.47	6
18	8.0	3	22	5.50	7
19	8.5	4	23	12.34	6
20	12.4	6	38	4.23	6
21	5.0	5	39	3.09	4
22	8.4	7	66	8.00	10
23	8.6	6			
24	14.1	5			
25	12.8	4			
34	6.3	3			
36	5.0	2			
37	5.8	2			
38	11.0	6			
39	3.3	4			
65	10.0	7			
68	13	11			
69	2.7	8			
All LUs combined retention	8.1				

\* From 2011 SFMP WTP retention analysis.

**Table 11: Current Stand Level Retention Percentage\***

Canfor			BCTS		
LU #	% THLB in WTP	*FSP Retention Target %	LU #	% THLB in WTP	FSP Retention Target %
3	16.2	7	9	9.30	3
19	6.8	7	12	4.56	3
20	4.38	7	14	5.05	5
24	0	7	15	6.73	6
25	4.82	7	16	8.71	4
26	8.8	7	17	4.38	2
			19	5.03	4
			20	9.47	6
			22	5.50	7
			23	12.34	6
			38	4.23	6
			39	3.09	4
			66	8.00	10
All LUs combined retention	7.8				

\*From 2013 Canfor WTP retention analysis.

FSP retention targets revised in February 2013 to 7%. Table 9B reflects the consolidated landscape units effected by the Fort Nelson Non Spatial Landscape Biodiversity Objectives Order. Table 9B also reflects the revised FSP WTP retention targets and the historical WTP retention completed to October 2008. There has been no harvesting in Fort Nelson by Canfor since October 2008. Therefore no harvesting has occurred under the revised targets.

Table 12: Area in Stands Less than 20 years old and polygons labelled as shrub area (TSR 3 VRI dataset 2018)<sup>3</sup>

<b>Stands Less Than 20 Years TSR3</b>			
TSA	Area of THLB (Ha)	Area of NHLB (Ha)	Area of GHLB (Ha)
Fort Nelson	38,413.06	9,001.73	47,414.80
<b>Shrub Stands (VRI - Shrub Low &amp; Shrub Tail) TSR3</b>			
TSA	Area of THLB (Ha)	Area of NHLB (Ha)	Area of GHLB (Ha)
Fort Nelson	18,267.55	168,441.28	186,708.83
<b>Total Shrub Area</b>	<b>56,680.61</b>	<b>177,443.01</b>	<b>234,123.62</b>
%	24%	76%	100%

GHLB represents Gross Harvest landbase.

Shrub area of 234,123.6 ha represents 4% of the CFLB of 5,700,568 ha. This is the baseline shrub area to be used for monitoring purposes.

In 2011 total shrub area represented 5% of the CFLB. This reduction in shrub area can be attributed primarily to the shutdown in timber harvesting, the aging of previously harvested stands beyond 20 years of age and differences in the rate of natural disturbance over the period.

<sup>3</sup> A surrogate for shrub area. Shrub area analysis updated in 2018.

## **Appendix 3 – Criterion 2 Supporting Data**

Table 13: Summary of Free Growing Data Blocks with Free Growing Date in 2015

Table 14: Regen Delay Population January 1, 2015 – December 31, 2015

Table 15: Plantation Pest Severity Ranking

Table 16: Action Plan Summary for 2012 Burned Reforestation Obligations

Table 17: Total Deletions from the Forested Landbase

Table 18: Oil and Gas Impact Risk Assessment

**Table 13: Summary of Free Growing Data Blocks with Free Growing Date in 2017**

<b>Licence</b>	<b>CP/TSL</b>	<b>Block</b>	<b>Area</b>	<b>Milestone Met</b>
A17007	537	221B	18.0	Yes
A17007	537	510B	20.3	Yes
A17007	548	2953	59.1	Yes
A17007	548	567	71.8	Yes
A17007	551	523	55.6	Yes
A17007	568	587	29.9	Yes
A17007	571	2952	51.0	Yes
A17007	571	558	6.0	Yes
A17007	611	1A	48.5	Yes
A17007	611	1B	76.6	Yes
A17007	613	3A	73.1	Yes
A17007	614	4C	63.1	Yes
A17007	617	7F	17.6	Yes
A17007	618	9A	16.6	Yes
A17007	618	9C	19.0	Yes
A17007	618	9EG	35.4	Yes
A17007	114	481	27.6	Yes
A17007	114	484	50.7	Yes
A17007	115	477	43.1	Yes
A17007	120	472	43.4	Yes
A17007	156	3834	2.8	Yes
A17007	156	3836	18.5	Yes
A67206	APR-67206	P489	19.8	Yes
A17007	542	535	56.4	Yes
A17007	542	536C	12.0	Yes
A54024	APR-54024	P273	20.0	Yes
A17007	456	CAT2593	101.3	Yes
A17007	113	630A	15.0	Yes
A17007	113	630C	22.8	Yes
A17007	113	631A	38.0	Yes
A17007	113	678	17.4	Yes
A17007	116	5003	49.7	Yes
A17007	116	5004	36.2	Yes
A17007	116	5005	37.1	Yes
A17007	160	4642	52.8	Yes
A17007	160	4643	5.2	Yes
A67215	APR-67215	KIW2224	11.4	Yes
A67215	APR-67215	KIW2229	14.5	Yes
A17007	130	1189	52.2	Yes
A17007	134	1158	32.7	Yes
A17007	134	1180	49.2	Yes
A17007	135	1177	10.7	Yes

A17007	141	1165	42.2	Yes
A17007	141	1165	42.2	Yes
A17007	142	1159	20.1	Yes
A17007	142	1196	32.9	Yes
A17007	142	1198A	14.7	Yes
A17007	95	1089B	49.0	Yes
A17007	592	901A	55.4	Yes
A17007	592	901B	40.1	Yes
A17007	592	901D	41.1	Yes
A17007	592	901F	43.0	Yes
A17007	592	901G	35.2	Yes
A17007	592	901H	28.0	Yes
A65232	APR-65232	NDD127	13.5	Yes
A69685	APR-69685	NDD2505	12.5	Yes
A70452	APR-70452	NDD142	36.0	Yes
A70452	APR-70452	NDD144	73.9	Yes
A17007	173	5853	21.1	Yes
A17007	541	533	56.7	Yes
A17007	117	1785	25.2	Yes
A17007	87	1772A	16.3	Yes
A17007	87	1772C	10.7	Yes
A17007	87	1773	33.5	Yes
A17007	87	1776	2.3	Yes
A17007	87	1777	23.4	Yes
A17007	87	1780	27.5	Yes
A17007	128	4563	78.4	Yes
A17007	50	2487	165.6	Yes
A67211	APR-67211	P74	18.3	Yes
A17007	125	TSO5836	20.5	Yes
A54022	APR-54022	P313	63.3	Yes
A54022	APR-54022	P3325	20.6	Yes
A67174	APR-67174	P239	36.6	Yes
A74693	APR-74693	TSO376	53.4	Yes
A74696	APR-74696	ETN933	56.9	Yes

**Table 14: Regen Delay Population January 1, 2017 – December 31, 2017**

<u>CP/TSL</u>	<u>Block</u>	<u>Area</u>	<u>Regen Delay Date</u>	<u>Milestone Met</u>
	<b>Total</b>	<b>0</b>		

There were no blocks with a regen due date during the reporting period.

**Table 15: Plantation Pest Severity Ranking\***

<b>Plantation Pests</b>	<b>Code</b>	<b>Potential Severity Ranking</b>
Eastern spruce budworm	IDE	Very High
White pine weevil	IWS	Low-Medium
Venturia spp.	DLV	Low
Harwood Truck Rot	DDH	Very low
Red ring rot	DDP	Very low
Aspen Truck Rot	DDT	Very low
Tomentosus root rot	DRT	Very low
Stem Disease	DS	Very low
Warren’s root collar weevil	IWW	Very low (due to small % of planted PL)

\*From 2011 SFMP analysis.

**Table 16: Action Plan Summary for 2012 Burned Reforestation Obligations**

<u>CP/TSL</u>	<u>Block</u>	<u>SU</u>	<u>Area</u>	<u>Area Burned</u>	<u>Action Plan</u>
76	592	2	4.50	4.50	Apply for relief of obligation under FRPR Section 108 in 2013
601	593	1	145.90	145.90	Apply for relief of obligation under FRPR Section 108 in 2013
601	598	1	139.20	139.20	Apply for relief of obligation under FRPR Section 108 in 2013
63	597A	1	81.00	81.00	Apply for relief of obligation under FRPR Section 108 in 2013
62	999ABC	1	15.10	15.10	Apply for relief of obligation under FRPR Section 108 in 2013
88	1050	1	27.70	27.70	Apply for relief of obligation under FRPR Section 108 in 2013
88	3220	1	17.00	17.00	Apply for relief of obligation under FRPR Section 108 in 2013
88	3219A	1	23.10	23.10	Apply for relief of obligation under FRPR Section 108 in 2013
139	KLU2321	A	30.30	4.00	Fill-plant burned area 2014
62	600B	2	5.80	5.80	Apply for relief of obligation under FRPR Section 108 in 2013
62	600A	A	76.30	76.30	Apply for relief of obligation under FRPR Section 108 in 2013
542	536B	1	25.50	4.00	Fill-plant burned area 2014
<b>Total Area</b>			<b>591.4</b>	<b>543.6</b>	

**Table 17: Total Deletions from the Forested Landbase\***

<b>Total deletions from the forested landbase – 2017 baseline data<sup>4</sup></b>	
<b>Category of deletion</b>	<b>Hectares</b>
Permanent roads, landings and trails	32,181
Range burns	12,080
Landslides resulting from forest management activities	0
Wells, pipelines & seismic lines	16,328
<b>GRAND TOTAL</b>	<b>60,589</b>
<b>CFLB</b>	<b>5,700,568</b>
<b>% of CFLB deleted from all industrial activities</b>	<b>1.06%</b>
<b>% of CFLB deleted from forest management activities</b>	<b>0.49%</b>

\*From 2017 TSR4 data package.

Baseline percentage of landbase deleted from production = Grand total deletions / CFLB

It is assumed that 50% of the roads, trails and landings were created by forest management activities and the remainder by oil and gas. Of note there was no harvesting and no road construction completed by forest management activities since 2008. The disturbance noted in the table represents historical disturbance on the land base.

<sup>4</sup> Baseline data taken from Fort Nelson TSR4 Data Package, February 2017



**Table 18: Oil and Gas Impact Risk Assessment\***

2011/12 Fiscal Year	Total Area (ha)	Total Volume (m3)
<b>Oil &amp; Gas Harvest Activity</b>		
Total New Cut Area - Oil & Gas	979.1	
Total Merchantable Volume Cut - Oil and Gas		149,071.51
<b>Potential Forest Licensee Harvest Activity</b>		
Total Annual Cut Area - BCTS & Canfor	4502.72	
Total Merchantable Volume Cut - BCTS & Canfor		1,463,384.00

\*Data provided by OGC Nov 26, 2012

**Table 19: TSA Disturbance Impact by Sector**

TSA Impact - Classification	Total Area (ha)	Total Volume (m3)	O&G Cut % of Area	O&G Cut % of AAC	Participants Cut % of Area	Participants Cut % of AAC
TSA area	<b>9,868,067</b>		0.010%		0.046%	
Area not in DFA (private, federal, indian, woodlots, etc)	29,927					
Area managed by MFLNRO (DFA)	<b>9,838,140</b>		0.010%		0.046%	
non productives areas (non forest, alpine, existing roads and trails, non commercial cover)	4,096,928					
Productive crown forest landbase	<b>5,741,212</b>		0.017%		0.078%	
NHLB area	4,308,943					
THLB area	<b>1,432,269</b>		0.068%		0.314%	
TSA AAC		<b>1,625,000</b>		9%		90.1%
Non certified tenures AAC		101,000				
Certified tenures						
BCTS AAC		299,668				
Canfor AAC		1,163,716				
Total Certified Participants AAC	979.1	<b>1,463,384</b>		10%		100%

**Discussion:**

O&G harvest activity averages approximately 979 ha per year of a combination of NHLB and THLB CFLB. This area includes road construction, well sites, seismic areas and pipeline areas. O&G timber harvest impact on DFA amounts to 0.01 % of the total DFA area annually. This is compared to forest industry impact on the DFA of 0.05% of the total DFA which is primarily comprised of THLB area.

When Canfor is operating, the majority of merchantable timber harvested by O&G is purchased by Canfor, which serves to reduce the total volume harvested under Canfor's forest tenures.

Therefore the impact on the AAC is minimal. Of the 2 non certified tenures identified in the AAC apportionment, no forest planning has occurred consequently, no forest harvesting has occurred. No harvest activity is expected under these non certified tenures.

**Conclusion:**

Given the small annual impact on the total DFA area from O&G activity, there is little risk to the participant's of not achieving SFMP landscape level ecological commitments as a result of O&G harvest activity.

## **Appendix 4 – Criterion 4 Supporting Data**

Table 20: Summary of ecosystem carbon storage in the forested landbase over a 250 year period

Table 21: Average carbon sequestration rate in the forested landbase over a 250 year period

**Table 20: Summary of ecosystem carbon storage in the forested landbase over a 250 year period\***

Carbon Pool	Current Carbon (MT)	Average Carbon Over 250 Years (MT)	Minimum Carbon (MT)	% Difference from Current Carbon	Year at Minimum	Maximum Carbon (MT)	% Difference from Current Carbon	Year at Maximum
Tree-aboveground	473	466	416	-12%	125	526	11%	50
Tree-belowground	112	109	97	-13%	125	123	10%	50
Deadwood	265	312	265	0%	0	342	29%	60
Litter	90	95	88	-2%	5	100	11%	50
Soil	811	916	811	0%	0	998	23%	250
<b>Total</b>	<b>1,752</b>	<b>1,898</b>	<b>1,752</b>	<b>0%</b>	<b>0</b>	<b>2,005</b>	<b>14%</b>	<b>240</b>

\*From 2006 carbon budget analysis completed for Fort Nelson DFA. No timber harvesting has occurred since October 2008. Historical average area harvested per year is approximately 4503 ha per year or 0.05% of the DFA. The lack of timber harvesting disturbance that has occurred since the carbon storage and sequestration analysis was completed, (only 2 years of timber harvest) suggests that the carbon analysis does not need to be revised at this time.

**Table 21: Average carbon sequestration rate in the forested landbase over a 250 year period\***

Carbon Pool	Current Sequestration Rate <sup>1,2</sup>	Base Case	Harvest without Natural Disturbance	No Harvest with Natural Disturbance	Base Case with Modified Natural Disturbance
Timber Harvesting Land Base	0.93	0.07 to 0.93 (-92% to 0%)	0.07 to 0.93 (-92% to 0%)	0.38 to 1.43 (-73% to 1%)	0.25 to 4.56 (-95% to 0%)
Non-Harvestable Land Base	0.55	-4.53 to 4.29 (-929% to 685%)	1.52 to 6.53 (-70% to 24%)	-6.79 to 4.26 (-908% to 408%)	0.08 to 0.93 (-92% to 0%)
<b>Total Forested Land Base</b>	<b>1.47</b>	<b>-3.96 to 5.00</b> <b>(-369% to 239%)</b>	<b>1.70 to 7.02</b> <b>(-72% to 16%)</b>	<b>-5.66 to 5.69</b> <b>(-349% to 151%)</b>	<b>0.13 to 3.63</b> <b>(-97% to 0%)</b>

\*From 2006 carbon budget analysis completed for Fort Nelson DFA. No timber harvesting has occurred since October 2008. Historical average area harvested per year is approximately 4503 ha per year or 0.05% of the DFA. The lack of timber harvesting disturbance that has occurred since the carbon storage and sequestration analysis was completed, (only 2 years of timber harvest) suggests that the carbon analysis does not need to be revised at this time.

## **Appendix 5 – Criterion 5 Supporting Data**

Table 22: Recreation sites and trails in the Fort Nelson DFA

Figure 10: Fort Nelson Visual Quality Objectives

Table 23: Visual Quality Objective Class

Table 24: Maximum Allowable Disturbance Percentage by VQO Class

Table 25: Percent Denudation for Established VQOs

Table 26: Canfor Direct and Induced Employment

Table 27: Indirect and Induced Employment multipliers from 2006 TSR

Table 28: Number of Opportunities offered to First Nations by year

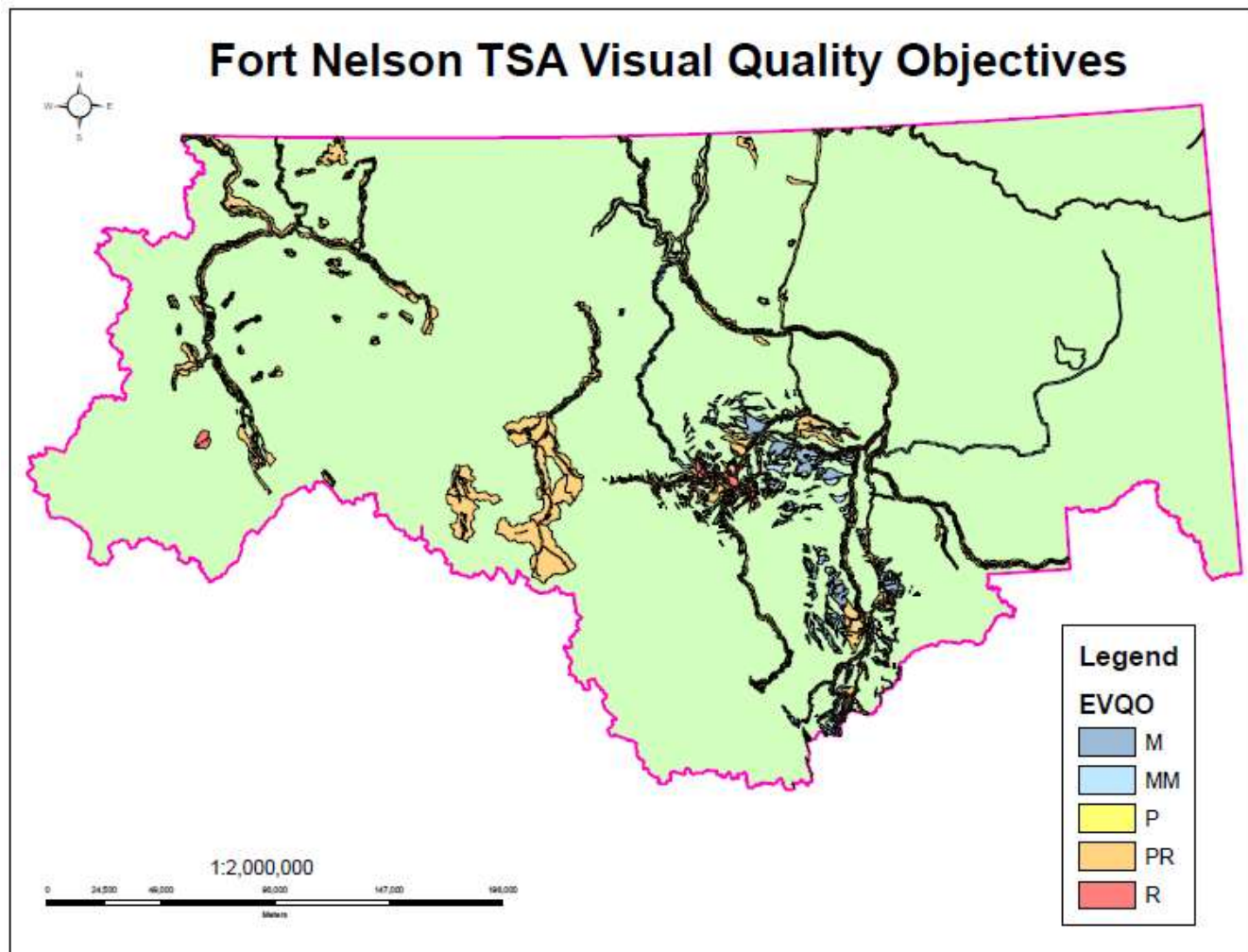
Table 27: Proportion of Local Spend

**Table 22: Recreation sites and trails in the Fort Nelson DFA\***

Recreation Sites	Recreation Trails
West Lake	Teetering Rock trail
Muskwa Boat Launch	Tetsa Bridge #1 trail
Tuchodi River	Stone Mountain Park trails
Gathto Creek	MacDonald Creek trail
Beaver Lake	Babba Creek Trail
Fort Nelson Recreation Demonstration Forest	Wokpash trail
Parker Lake	Boulder Canyon trail
<b>Recreational Motorized Routes</b>	Peterson Canyon trail
Wokpash Corridor	Muncho Lake trails
Yedhe Trail	Mineral Lick trail
West Toad Corridor	Teeter Creek trail
Nonda Creek Corridor	Smith River Falls trail
Liard River Corridor	Tsimeh Lakes trail
Mould Creek Tower Road	Fort Nelson Community Forest trails
Smith River Road	Dunedin trail
Fort Nelson Snowmobile Trails	Summit Ridge trail
Fort Nelson Motorized Community Trail system	Stone's Sheep trail
<b>Non Legally Established Recreation Sites</b>	Parker/Evie Lake trail
Alaska Highway 372 km borrow pit	Summit Peak trail
Alaska Highway km 384 borrow pit 3	Erosion Pillar trail
Alaska Highway km 391 borrow pit 5	"The Cutt" trail
Alaska Highway borrow pits 6, 7, 9, 10	Red Rock Canyon trail
Alaska Highway km 416	Old Alaska Highway trail
Muskwa River Bridge Recreation Site	
Poplar Hills Emergency Warming Shelter	
Fort Nelson Motorized Community Trail system	

\*Updated in 2016 with data from MFLNRO

Figure 10: Fort Nelson Visual Quality Objectives



**Table 23: Visual Quality Objective Class\***

<b>Visual Quality Objective Class</b>	<b>TSA Area (ha)*</b>	<b>Crown Forested Land Base Area (ha)</b>	<b>Timber Harvesting Land Base Area (ha)</b>
Established Preservation VQO	879	814	99
Established Retention VQO	32,518	25,470	6483
Established Partial retention VQO	502,325	357,716	113,431
Established Modification VQO	127,342	105,816	38,080
Established Maximum modification VQO	14,028	11,661	4,410
<b>Subtotal:</b>	<b>677,090</b>	<b>501,477</b>	<b>162,503</b>
Recommended Preservation VQO	0	0	0
Recommended Retention VQO	19,528	7,268	113
Recommended Partial retention VQO	8,246	5,172	2,083
Recommended Modification VQO	168,037	87,778	15,056
Recommended Maximum modification VQO	31,625	14,151	7,242
<b>Subtotal:</b>	<b>195,811</b>	<b>100,219</b>	<b>17,252</b>
<b>Total:</b>	<b>872,902</b>	<b>601,696</b>	<b>179,755</b>

\*From 2011 SFMP



**Table 24: Maximum Allowable Disturbance Percentage by VQO Class\***

Resource Emphasis Zone	Total Crown forest area (ha)	Timber harvesting land base (ha)	Maximum allowable disturbance (%)	Applies to:
Established Preservation VQO	879	814	0	CFLB
Established Retention VQO	32,518	25,470	1.1 – 5	CFLB
Established Partial retention VQO	502,325	357,716	5.1 – 15	CFLB
Established Modification VQO	127,342	105,816	15.1 – 25	CFLB
Established Maximum modification VQO	14,028	11,661	25.1 – 40	CFLB
Recommended Preservation VQO	0	0	0	CFLB
Recommended Retention VQO	19,528	7,268	1.1 – 5	CFLB
Recommended Partial retention VQO	8,246	5,172	5.1 – 15	CFLB
Recommended Modification VQO	168,037	87,778	15.1 – 25	CFLB
Recommended Maximum modification VQO	31,625	14,151	25.1 – 40	CFLB

\*From 2011 SFMP

**Table 25: Percent Denudation for Established VQOs\***

VQO Category	Percent Denudation Range	Low VAC	Medium VAC	High VAC
Preservation	0 – 1	0.25	0.5	0.75
Retention	1.1 – 5	2.07	3.05	4.02
Partial Retention	5.1 – 15	7.57	10.05	12.52
Modification	15.1 – 25	17.57	20.05	22.52
Maximum Modification	25.1 – 40	28.82	32.55	36.27

\*From 2011 SFMP

**Table 26: Canfor Direct and Induced Employment**

Canfor Direct Employment as on March 31, 2017*	Indirect and induced employment multiplier	Total jobs; direct, indirect and induced
4	1.25	5
Baseline from 2014 Annual Report**	Indirect employment multiplier	Total jobs; direct, indirect and induced
4	1.25	5

\* From 2017 employment records.

\*\* From 2015 employment records.

**Table 27: Indirect and Induced Employment multipliers from 2006 TSR\***

	<b>Indirect and Induced Employment Ratio</b>	<b>Indirect Employment Ratios</b>
Logging	1.25	1.15
Wood Manufacturing	1.35	1.20
Mining	1.34	1.25
Agriculture	1.17	1.11
Tourism	1.12	1.09
Public Sector	1.19	1.13
Construction	1.22	1.14

BC Stats, 2001a. The indirect and induced employment ratio assumes no migration with safety net in place.

\*From 2011 SFMP analysis.

**Table 28: Number of Opportunities offered to First Nations by year**

Participant	Year	Number of opportunities	Form of Opportunity	Rolling 3 year average 2012	Rolling 3 year average 2013	Rolling 3 year average 2014	Rolling 3 year average 2015	Rolling 3 year average 2016	Rolling 3 year average 2017
Canfor	2007	5	4 contracts 1 MOU	Not in data set					
	2008	4	3 contracts 1 MOU	Not in data set					
	2009	1	0 contract 1 MOU	Not in data set					
	2010	1	0 Contract 1 MOU	1.0					
	2011	1	0 Contract 1 MOU						
	2012	1	0 Contract 1 MOU		1.0				
	2013	1	0 Contract 1 MOU			1.0			
	2014	1	0 Contract 1 MOU				1.0		
	2015	1	0 Contract 1 MOU					1.0	
	2016	1	0 Contract 1 MOU						1.0
	2017	1	0 Contract 1 MOU						

**Table 29: Proportion of Local Spend 5 year Rolling Average**

<b>Participant</b>	<b>Year</b>	<b>Road Maintenance Proportion of Local Spend (%)</b>	<b>Planning Proportion of Local Spend (%)</b>	<b>Silviculture Proportion of Local Spend</b>	<b>5 Year Rolling Average* Proportion of Local Spend</b>
<b>Canfor</b>	<b>2011</b>		<b>46%</b>	<b>50%</b>	<b>48%</b>
	<b>2012</b>	<b>98.9%</b>	<b>17.1%</b>	<b>50.8%</b>	<b>51.2%</b>
	<b>2013</b>	<b>100%</b>	<b>36.1%</b>	<b>34.1%</b>	<b>35.6%</b>
	<b>2014</b>	<b>100%</b>	<b>18.0%</b>	<b>46.5%</b>	<b>46.8%</b>
	<b>2015</b>	<b>92.4%</b>	<b>17.0%</b>	<b>41.5%</b>	<b>41.4</b>
	<b>2016</b>	<b>14%</b>	<b>3%</b>	<b>50%</b>	<b>34%</b>
	<b>2017</b>	<b>91%</b>	<b>62%</b>	<b>41%</b>	<b>47%</b>
				<b>5 Year rolling average</b>	<b>41.0%</b>

**\*Starting in 2011**

## **Appendix 6 – Criterion 6 Supporting Data**

Table 30: Summary of 2017 Public Participation Process Satisfaction Survey

**Table 30: Summary of 2017 Public Participation Process Satisfaction Survey, Administered 2018\01\18**

Question	Rating
5. I have a good understanding of the purpose of the advisory group and my role as part of that group.	5.0
6. My concerns related to SFM values and objectives are being adequately listened to at the Advisory Group meetings.	5.0
7. Efforts have been made to incorporate my concerns related to SFM values and objectives into the SFM Plan.	5.0
8. My concerns related to SFM indicators and targets are being adequately listened to at the Advisory Group meetings.	5.0
9. Efforts have been made to incorporate my concerns related to SFM indicators and targets into the SFM Plan.	5.0
10. Information provided in advance of meetings is adequate and organized to allow for me to effectively contribute.	5.0
11. Advisory Group Meetings are run efficiently and effectively.	5.0
12. The meeting agenda allows for inclusion of any related sustainable forestry issues of concern to advisory group members.	5.0
13. The meeting minutes capture important aspects of the meeting.	5.0
14. Additional information I ask for is provided to me.	5.0
15. The Participants encouraged open communication.	5.0
16. The outputs generated through discussion with the public advisory group (SFM Plan and annual monitoring reports) are clear and concise.	5.0
17. The Participants strived for consensus based decision making.	5.0
18. A broad cross-section of interests is represented at Public Advisory Group meetings.	4.2
19. The Participants have made an effort to recruit new members as needed.	4.6
20. The Participants are proactive about sharing new information to the PAG members regarding topic issues related to environment, sustainability, forestry, etc.	5.0
21. Your overall level of satisfaction with the Public Participation Process:	5.0
<p>Comments:</p> <ol style="list-style-type: none"> <li data-bbox="191 1182 1448 1299">1. Broad cross section of interests remains somewhat of an issue due to general lack of interest in the community. The participants have made all reasonable efforts to secure new members. Awesome job, very happy to continue on this committee.</li> </ol>	