

SUSTAINABLE FOREST MANAGEMENT PLAN 4

2016 - 2017 ANNUAL REPORT

TFL 48



Canadian Forest Products Ltd.
Chetwynd Division
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2016 - 2017 ANNUAL REPORT

Canadian Forest Products Ltd.
Chetwynd Operations — TFL 48

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EXECUTIVE SUMMARY

As shown in the following Table; of the 59 Indicators 8 (13.6%) were not reported this year, 47 indicators met the targets (79.6%) and in 5 instances targets were not met (8.5%). With the shutdown of Chetwynd Mechanical Pulp/Paper Excellence the data has been supplied only for their silvicultural operations in the 2016-2017 reporting year, with no harvesting or planting data available as no harvesting or planting occurred on the TFL in this reporting period. This data includes Canfor, BCTS, West Fraser and Chetwynd Mechanical Pulp operations on TFL 48.

Table 1: Summary of 2016-2017 Performance

Indicator	Target			
	Met	Not Met	Not Reported (Next Date for Reporting)	Recommend Reporting be Suspended
2.1 Ecosystem Representation Ecosystem Representation	✓			
2.2 Forest Types	✓		2020-2021	
2.3 Late Seral Forest	✓			
2.4 Patch Size Distribution	✓			
2.5 Snags/Live Tree Retention	✓			
2.6 Wildlife Tree Patches	✓			
2.7 Average Minimum Width of RRZ and RMZ	✓			
2.8 Shrubs/Early Forest	✓		2020-2021	
2.9 Wildlife Habitat Areas, Ungulate Winter Ranges and Dunlevy Creek Management Plan	✓			
2.10 Habitat Supply for Species of Public Concern	✓		2020-2021	
2.11 Species of Management Concern	✓			
2.12 Coniferous Seeds	✓			
2.13 Deciduous Seeds and Vegetative Material	✓			
2.14 Class A Parks, Ecological Reserves and LRMP Designated Protected Areas	✓			
2.15 Known Values and Uses Addressed in Operational Planning	✓			
2.16 Conformance to Elements Pertinent to Treaty Rights		✓		
2.17 Free Growing Stands	✓			
2.18 Regeneration Declaration	✓			
2.19 Area of Forested Land Lost to Non-forest Industry			2017-2018	
2.20 Permanent Access Corridors	✓		2020-2021	
2.21 Harvest Levels/Volumes	✓			
2.22 Allowable Annual Cut	✓			
2.23 Soil Degradation	✓			
2.24 Soil Disturbance Surveys	✓			
2.25 Use of Environmentally Friendly Lubricants	✓		2020-2021	
2.26 Site Index		✓		
2.27 Coarse Woody Debris		✓		
2.28 Stream Crossing Quality Index	✓			
2.29 Action Plans for High Water Quality Concern Rating (WQCR)	✓			
2.30 Peak Flow Index	✓			
2.31 Watershed Reviews	✓			
2.32 Spills Entering Waterbodies	✓			
2.33 Carbon Sequestration	✓		2020-2021	
2.34 Ecosystem Carbon Storage (Mg) in the DFA	✓		2020-2021	

Indicator	Target			
	Met	Not Met	Not Reported (Next Date for Reporting)	Recommend Reporting be Suspended
2.35 Range Opportunities	✓			
2.36 Harvest Method		✓		
2.37 Proportion of Harvesting Consistent with Visual Quality Objective	✓			
2.38 Back Country Condition	✓			
2.39 Recreational Sites	✓			
2.40 Consistency with Third Party Action Plans	✓			
2.41 Waste	✓			
2.42 Forest Health	✓			
2.43 Proportion of Completed Forest Health Action Plans	✓			
2.44 Community Donations	✓			
2.45 Local Employment	✓			
2.46 Summer and Fall Deliveries	✓			
2.47 Level of Investment in Training and Skills Development	✓			
2.48 Level of Direct and Indirect Employment	✓			
2.49 Level of Aboriginal Participation in the Forest Economy	✓			
2.50 First Nations Awareness Training	✓			
2.51 Consultation and Information Sharing with First Nations on Management Plans	✓			
2.52 Diversifying the Local Economy	✓			
2.53 Safety Over the DFA	✓			
2.54 Public Advisory Committee Satisfaction	✓			
2.55 Public Advisory Committee	✓			
2.56 Public Advisory Committee Terms of Reference	✓			
2.57 Educational Opportunities	✓			
2.58 Response to Public Inquiries	✓			
2.59 Distribution/Access to SFM Plan, Annual Reports and Audit Results		✓		

ACKNOWLEDGEMENTS

We would like to thank the Chetwynd Woodlands staff, BC Timber Sales (Dawson Creek) staff, West Fraser (CFI) staff, and Chetwynd Mechanical Pulp (Louisiana-Pacific Canada) staff for compiling or providing data.

We would also like to thank the Public Advisory Committee members and advisors for their continued input to the Sustainable Forest Management process and providing input on the draft document. The summary of indicator performance was reviewed with the Public Advisory Committee at the October 25, 2017 PAC meeting.

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1 INTRODUCTION & OVERVIEW

Canadian Forest Products Ltd. (Canfor) achieved registration under the Canadian Standards Association CAN/CSA Z809-96 Sustainable Forest Management System for Tree Farm Licence (TFL) 48's (see Figure 1) forestry operations in July 2000. A public group — the Chetwynd Public Advisory Committee (PAC) — was formed at the beginning of 2000 to help Canfor identify quantifiable local-level values, objectives indicators and targets for sustainable forest management. The original indicators and targets identified by the PAC were detailed with associated forest management practices to achieve those targets in the Sustainable Forest Management Plan for Tree Farm Licence 48 (Canfor 2006). In 2006 BC Timber Sales (BCTS) joined the registration and a joint certificate was issued to Canfor and BCTS. In 2011 the Sustainable Forest Management Plan 4 was updated to the CAN/CSA Z809-08 Sustainable Forest Management standard. In 2013 separate registration certificates were provided to Canfor and BCTS.

In 2014, the Sustainable Forest Management Plan was updated to remove the Management Plan content which basically consisted of the Timber Supply Data used for the determination of the Allowable Annual Cut (AAC) for TFL 48. This resulted in the creation of two separate stand-alone documents; SFMP #5 and the TFL 48 Management Plan.

In addition, a change was made to the period of the reporting year for the TFL 48 SFM Annual Report. The reporting period will now coincide with the government fiscal reporting year rather than the calendar year, going forward this Annual Report will cover all activities from the period between April 1 to March 31 annually. The Public Advisory Committee was notified, and agreed to this change at the October 22, 2014 PAC meeting.

The Sustainable Forest Management Plan #5 is the document referenced for the 2016-2017 Annual Report spanning the April 1, 2016 to March 31, 2017 reporting year. It reports on the status of each indicator and where appropriate suggests revisions to indicators and targets, or the way they are measured.

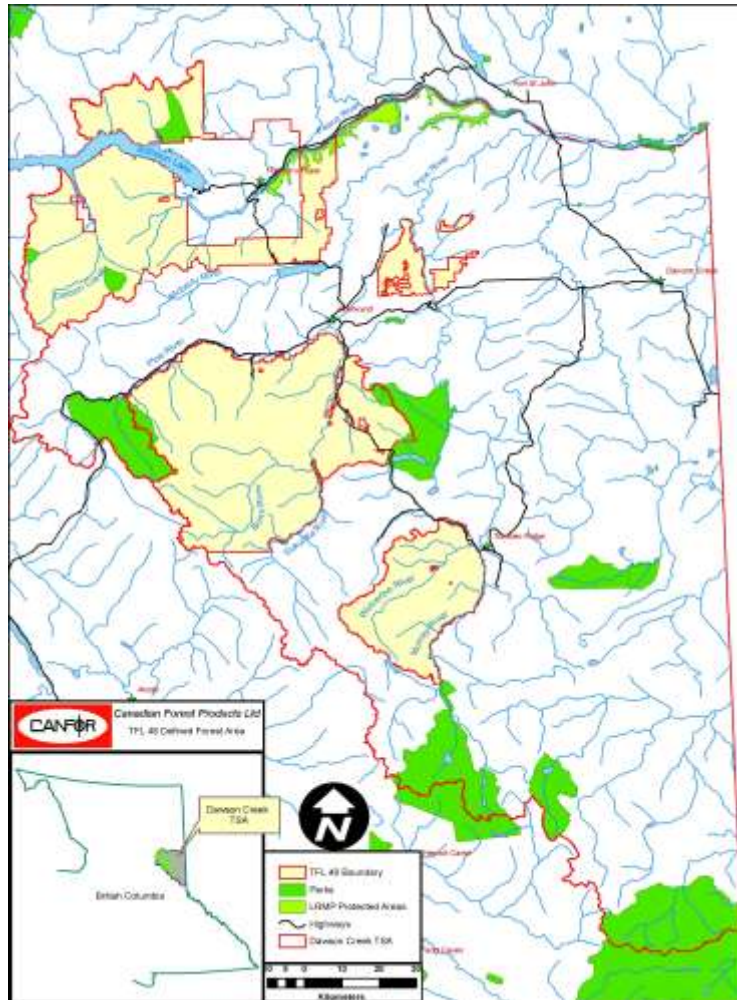


Figure 1: Tree Farm Licence 48

This report is prepared as an annual report required by the CSA standard. Annual performance as indicated in this report is for Tree Farm Licence (TFL) 48 which is the defined area for Canfor's CSA certification. In this report, each Indicator is reiterated, and a brief status report is provided which also includes whether or not the variance is being utilized in each indicator. For additional information on the Indicators and Objectives, or the practices involved, the reader should refer to Canfor's Sustainable Forest Management Plan #5 located on the Canfor corporate website at: http://www.canfor.com/docs/default-source/responsibility/final_sfmp5_feb_20_2018.pdf

The Public Advisory Committee received a copy of this report (SFMP #5) to review at the April 22, 2016 Public Advisory Committee meeting.

1.1 OVERVIEW

The format of the remainder of this document and the detailed status of each indicator are provided below. *This document is subject to review by the Public Advisory Committee (PAC).*

Information was provided by both BCTS and West Fraser for harvesting, road construction and silviculture activity for activities on the TFL and was included into the applicable indicators. As of the date of preparation and submission of this report to the Chetwynd Public Advisory Committee for review and comment, Chetwynd Mechanical Pulp is still shut down and their only activities are silviculture related. Chetwynd Mechanical Pulp did not complete any harvesting or planting activities on the TFL in the reporting period.

1.2 SIGNIFICANT CHANGES

A significant development in the management of TFL 48 is the revision of SFMP 4 from the CSAZ809-02 to the CSA Z809-08 Standard. SFMP 4 (2011) has also been updated to reflect the amendments made to the Acts and Regulations that regulate the forestry industry. Of particular importance is the amendment in the timing of Allowable Annual Cut (AAC) Determinations from 5 to 10 years. This has impacted the reporting period for a number of indicators which are identified in Table 1 at the beginning of this report. Changes to the Tree Farm Licence Regulation have also eliminated the need to identify Management Plan results and strategies for specific areas of forest management such as silviculture for example. All of the Indicators and Targets within SFMP 4 are meant to address CSA requirements and not the TFL Management Plan.

In 2013, BCTS was granted separate certification under the CAN/CSA Z809-08 standard. For reporting purposes, BCTS indicator performance information has been included in this annual report.

The 2013 reporting year also saw the initiation of an expedited Timber Supply Review (TSR) conducted for TFL 48 in response to an application for an AAC uplift to effectively salvage a greater proportion of the mountain pine beetle affected timber within TFL 48. In support of the AAC uplift request, Canfor has submitted a stand-alone TFL 48 Management Plan (SFMP #5) to the MFLNRO for approval. Upon approval of Management Plan #5, SFMP # 4 was revised to remove the Management Plan #4 content which became redundant with the approval of stand-alone Management Plan #5. Management Plan #5 was approved in February 2015 and will be

in effect starting April 1, 2015. The 2016-2017 Annual Report will report out on the indicators as written in SFMP #5.

As of October 15, 2015 TFL 48 saw an annual allowable cut increase granted by the Ministry of Forests Lands and Natural Resource Operations after an application for an AAC uplift was requested in 2013. The AAC saw an increase from 900,000 cubic meters to 1,550,000 cubic meters for a five year period ending October 15, 2020. With the AAC there is also included a 100,000 cubic meter cut which allows for the harvest of both deciduous and coniferous trees within deciduous-leading stands. A full TSR will be completed before the uplift period ends in October 2020.

In 2016 an agreement was reached between Canfor and West Fraser in response to a volume transfer between Houston and Quesnel and Chetwynd which saw the allocation of about 224,000m³ going to West Fraser Chetwynd Forest Industries from TFL 48. Another agreement between Canfor and West Fraser is being considered to help Canfor's TFL 48 address the new AAC as the Chetwynd Mill is currently not at a capacity that will allow for the full utilization of the entire uplift volume as outlined in the new AAC determination.

2 SFM INDICATORS AND OBJECTIVES

2.1 ECOSYSTEM REPRESENTATION

Criterion 1:	Element(s): 1.1, 1.2, 1.4
Biological Diversity	Ecosystem Diversity; Species Diversity; Protected Areas and Sites of Special Biological and Cultural Significance
CSA Core Indicator(s): 1.1.1: Ecosystem area by type 1.2.1: Degree of habitat protection for selected focal species, including species at risk 1.2.2: Degree of suitable habitat in the long term for selected focal species, including species at risk 1.4.1: Proportion of identified sites with implemented management strategies	
Indicator Statement	Target Statement
Proportion of rare ecosystem groups reserved from harvest	100% of rare ecosystems reserved from harvest
Value(s): Ecosystem Diversity, Native Species Richness, Protected areas and sites of special geological, biological, or cultural significance	
SFM Objective: We will conserve or restore ecosystem diversity within the natural range of variation within DFA over time. We will sustain sufficient and appropriately distributed suitable habitat elements to maintain native species richness. We will implement management strategies appropriate to the long term maintenance of protected areas and sites of special geological, biological, or cultural significance.	

STATUS AND COMMENTS:

Between April 1, 2016 and March 31, 2017, 31 blocks were harvested on the TFL by Canfor and BCTS. Of those 31 cut blocks, Canfor harvested 30 blocks and BCTS sold 1 timber sale. Two (2) Canfor blocks were identified to potentially contain rare ecosystems however only one (1)

block contained rare eco. The identified portion of the block that contained the rare eco was less than 5 ha in size but was removed from the harvest area as a Wildlife Tree Patch.

The BCTS cut block did not identify the presence of any rare ecosystems in the mapping phase and did not identify any rare ecosystems in the field. All blocks were in compliance with identifying and reserving rare eco as required.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.2 FOREST TYPES

Criterion 1:	Element(s): 1.1
Biological Diversity	Ecosystem Diversity
CSA Core Indicator(s): 1.1.2: Forest area by type or species composition	
Indicator Statement	Target Statement
Percent distribution of forest type (deciduous, deciduous mixedwood, conifer mixedwood, conifer) >20 years old across DFA	100% of forest type groups will be within the target range (Conifer - 75-85%, Conifer Mixedwood - 4-6%, Deciduous - 9-15%, Deciduous Mixedwood - 2-4%)
Value(s): Ecosystem Diversity	
SFM Objective: We will conserve or restore ecosystem diversity within the natural range of variation within the DFA over time.	

STATUS AND COMMENTS:

This indicator is reported on every 5 years. The table below represents the status of this indicator at the end of 2015 and was reported on in the 2015-2016 Annual Report which showed that all forest type groups are within the target range. The next time this indicator will be updated will be in 2020 and will be reported on in the 2020-2021 annual report.

Table 2: Forest Type Distribution Current and FDP Status and Target Ranges

Forest Type	Area by Forest Type					Target Range
	MP 5 %	2010	%	2015	%	
Coniferous	78%	423,107	80%	412,310	79%	75-85%
Mixed - Coniferous	6%	27,374	5%	25,768	5%	4-6%
Mixed - Deciduous	4%	18,121	3%	17,599	3%	2-4%
Deciduous	12%	63,743	12%	66,176	13%	9-15%
Grand Total		532,345	100%	521,853	100%	

REVISIONS:

No revisions are suggested for this indicator or objective.



2.3 LATE SERAL FOREST

Criterion 1:	Element(s): 1.1
Biological Diversity	Ecosystem Diversity
CSA Core Indicator(s): 1.1.3: Forest area by seral stage or age class	
Indicator Statement	Target Statement
The minimum acceptable proportion (%) of late seral forest by Natural Disturbance Unit (NDU) and NDU by BEC	The minimum proportion (%) of late seral forest by NDU and NDU by BEC as shown in Table 11
Value(s): Ecosystem Diversity	
SFM Objective: We will conserve or restore ecosystem diversity within the natural range of variation within DFA over time.	

STATUS AND COMMENTS:

As part of the annual reporting, an assessment on the impact of the existing and proposed harvest was made on the late seral targets for TFL 48. The following provides a summary of the results:

All targets are met for the deciduous NDU/BEC units for late seral forest targets (101+), (See Table 3).

Late Seral targets are met for the conifer NDU/BEC units: **Boreal Plains; Boreal Foothills – Valley; and Boreal Foothills – Mountain; Omineca – Valley** (See Table 4). Each NDU/BEC continues to have a surplus in late seral forest above the 141+ target.

The only targets not being met is the **Omineca Mountain and Omineca - Wet Mountain units**. These units did not achieve the target at the overall landscape level however each NDU/BEC combination did meet their identified targets. Both Omineca Mountain and Wet Mountain units have been in deficit in the amount of late seral since this indicator was developed. However, the Omineca – Mountain region continues to decrease in its deficit. Currently there is no logging planned in the wet mountain in the near future. Planned operations in these regions will be closely monitored and harvesting operations will ensure that there is sufficient near old seral forest to recruit to old seral forest.

REVISIONS:

No revisions are suggested for this indicator or objective.



Table 3: Current and Projected Harvest Status of Late Seral Forest – Deciduous

NDU	BEC	<40				40-100				101+						Total Forested Area	101+ Target	Years to Meet Target
		Current		Projected		Current		Projected		Current			Projected					
		Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Surplus (Deficit)	Ha	%	Surplus (Deficit)			
Boreal Plains - Deciduous	BWBSmw1	1,124	25%	827	19%	1027	23%	1,440	32%	2,289	52%	1,845	2,173	49%	1,729	4,439	10%	
	BWBSwk1	66	17%	12	3%	164	42%	206	53%	158	41%	119	171	44%	132	388	10%	
	ESSFmv2	1	17%	4	67%	1	17%	1	17%	4	67%	3	1	17%	0	6	10%	
	SBSwk2		0%		0%		0%		0%	0	0%	0	0	0%	0	2	N/A	
Boreal Plains Total		1,191	25%	843	17%	1,192	25%	1,647	34%	2,451	51%	1,968	2,345	49%	1,862	4,835	10%	0
Boreal Foothills - Valley - Deciduous	BWBSmw1	2,925	62%	643	14%	548	12%	2,685	57%	1,223	26%	753	1,368	29%	898	4,696	10%	
	BWBSwk1	0	0%	20	17%	56	47%	41	35%	62	53%	50	59	50%	47	118	10%	
	BWBSwk2	144	34%	102	24%	14	3%	56	13%	266	63%	224	266	63%	224	424	10%	
	SBSwk2	2,347	69%	946	28%	540	16%	1,888	56%	501	15%	162	554	16%	215	3,388	10%	
Boreal Foothills Total		5,416	63%	1,711	20%	1,158	13%	4,670	54%	2,052	24%	1,189	2,247	26%	1,384	8,626	10%	0
Grand Total		6,607	44%	2,554	19%	2,350	19%	6,317	44%	4,503	37%	4,503	4,592	34%	4,592	13,461		

Table 4: Current and Projected Harvest Status of Late Seral Forest – Coniferous

		<40				40-120				121-140				141+				Total Forested Area	141+ Target	Years to Meet Target		
NDU	BEC	Current		Projected		Current		Projected		Current		Projected		Current		Projected						
		Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Surplus (Deficit)	Ha	%	Surplus (Deficit)					
Boreal Plains	BWBSmw1	2349.9	38%	2,759	44%	97	2%	73	1%	1,703	27%	1,059	17%	975	16%	664	983	16%	672	6211.5	5%	
	BWBSwk1	1260	23%	1,444	26%	495	9%	458	8%	1,582	28%	1,361	24%	1,327	24%	1,048	1,367	25%	1,088	5576.7	5%	
	ESSFmv2	12.5	1%	168	9%	36	2%	21	1%	545	28%	478	25%	801	42%	705	724	38%	628	1912.6	5%	
	SBSwk2	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	N/A	0	0%	0	0	N/A	
Boreal Plains Total		3,622	26%	4,371	32%	628	5%	552	4%	3,830	28%	2,898	21%	3,103	23%	774	3,074	22%	745	13,701	17%	0
Boreal Foothills - Valley - Conifer	BWBSmw1	1,548	25%	1,844	30%	243	4%	243	4%	1,435	23%	1,094	18%	3,407	55%	2,973	3,014	49%	2,580	6,194	7%	
	BWBSwk1	391	34%	672	59%	99	9%	30	3%	109	10%	71	6%	708	62%	628	373	33%	293	1,145	7%	
	BWBSwk2	97	10%	3	0%	76	8%	69	7%	618	61%	384	38%	310	31%	239	555	55%	484	1,012	7%	
	SBSwk2	4,773	28%	7,061	42%	448	3%	328	2%	3,948	24%	3,369	20%	8,116	48%	6,940	6,038	36%	4,862	16,794	7%	
Boreal Foothills - Valley - Conifer Total		6,809	27%	3,580	38%	866	3%	670	3%	6,110	24%	4,918	20%	12,541	50%	6,758	9,980	40%	4,197	25,145	23%	0
Boreal Foothills - Mountain - Conifer	ESSFmv2	2,773	21%	5,989	46%	400	3%	270	2%	2,698	21%	1,794	14%	6,988	54%	5,696	4,870	38%	3,578	12,922	10%	
	ESSFmv4	6	0%	0	0%	22	2%	27	2%	463	38%	319	26%	731	60%	609	875	72%	753	1,221	10%	
	ESSFwc3	55	18%	248	79%	0	0%	13	4%	207	66%	3	1%	89	28%	58	49	16%	18	313	10%	
	ESSFwk2	466	14%	1,395	42%	34	1%	45	1%	1,058	32%	571	17%	1,696	52%	1,368	1,273	39%	945	3,284	10%	
Boreal Foothills - Mountain - Conifer Total		3,299	19%	7,632	43%	456	3%	355	2%	4,426	25%	2,687	15%	9,504	54%	3,650	7,067	40%	1,213	17,739	33%	0
Omineca - Valley	BWBSmw1		0%		0%	0	0%	0	0%	0	0%	0	0%	0	0%	N/A	0	0%	0	0	N/A	
	SBSwk2	16	1%	651	44%	12	1%	3	0%	712	49%	259	18%	727	50%	624	553	38%	450	1,466	7%	
Omineca - Valley Total		1.6	1%	651	44%	12	1%	3	0%	712	49%	259	18%	727	50%	390	553	38%	216	1,466	23%	0
Omineca - Mountain	ESSFmv2	80	3%	1,566	54%	41	1%	33	1%	1,309	45%	458	16%	1,480	51%	986	851	29%	357	2,908	17%	
Omineca - Mountain Total		80	3%	1,566	54%	41	1%	33	1%	1,309	45%	458	16%	1,480	51%	-207	851	29%	-836	2,908	58%	0
Wet Mountain	ESSFmv2	63	9%	62	8%		0%		0%	44	6%	44	6%	637	86%	451	637	86%	451	743	25%	
	ESSFwc3	32	14%	15	7%	1	0%		0%	0	0%	1	0%	215	93%	158	214	93%	157	230	25%	
	ESSFwk2	821	38%	1,043	48%	5	0%	4343	2%	42	2%	46	2%	1,058	55%	577	1,058	48%	489	2,160	25%	
	SBSwk2	1,372	58%	830	35%	13	1%	176	7%	352	15%	358	15%	985	42%	398	985	42%	398	2,349	25%	
Wet Mountain Total		2,288	42%	1,950	36%	19	0%	219	4%	438	8%	449	8%	2,897	53%	-1,709	2,865	52%	-1,741	5,483	84%	100
Grand Total		16,114	24%	25,750	39%	2,022	3%	1,832	3%	16,825	25%	11,669	18%	30,252	46%		24,390	37%		66,441		

2.4 PATCH SIZE DISTRIBUTION

Criterion 1:	Element(s): 1.1
Biological Diversity	Ecosystem Diversity
CSA Core Indicator(s) 1.1.3: Forest area by seral stage or age class	
Indicator Statement	Target Statement
Percent area by Patch Size Class (0-50, 51-100 and >100 ha) by Natural Disturbance Unit (NDU) by early or mature and proportion of mature interior forest condition.	Targets by Patch Size Class by NDU by early or mature are shown in Table 15.
Value(s): Ecosystem Diversity	
SFM Objective: We will conserve or restore ecosystem diversity within the natural range of variation within DFA over time.	

STATUS AND COMMENTS:

In the 2016 – 2017 reporting year, Canfor has met the patch size targets in the Early and Mature Patch Sizes. The target for the Wet Mountain NDU remains equal with the target for this NDU in the Early Patch Size. This will be monitored to ensure any blocks developed within the Wet Mountain NDU, are all less than 100 ha to stay below the target of <60%.

Currently there is no logging planned in the wet mountain in the near future. If harvesting is proposed in that area in the near future, we will consider a strategy of logging a mixture of both smaller and medium sized patches to ensure we do not exceed the large patch target of <60% while maintaining a mixture of various aged forests across the TFL and specifically, within the Wet Mountain NDU.

In all other cases (current and projected) for both early and mature patch size distribution the analysis shows that forest practices are maintaining the relative abundance of the various aged forests across the TFL.

Table 5: Early Patch Size Class Current and Projected

NDU	Current/ Projected	Patch Class (ha)								Total
		<50		50-100			100+			
		ha	%	ha	%	Target	ha	%	Target	
Boreal Plains	Current	1,158	6%	593	3%	<15%	17,541	91%	>50%	19,292
	Projected	1,187	6%	734	4%	<15%	18,115	90%	>50%	20,036
Boreal Foothills/Omineca	Current	4,087	8%	5,035	10%	<20%	43,311	83%	>40%	52,434
	Projected	3,186	5%	4,389	7%	<20%	55,541	88%	>40%	63,117
Wet Mountain	Current	1,274	18%	1,513	22%	<25%	4,146	60%	<60%	6,933
	Projected	1,265	19%	1,513	23%	<25%	3,933	59%	<60%	6,711

Table 6: Mature Patch Size Class Current and Projected

NDU	Current/ Projected	Patch Class (ha)							Grand Total	Total Interior Forest %	Interior Forest Target
		<50		50-100		100+					
		ha	%	Ha	%	ha	%	Target			
Boreal Plains	Current	8,694	13%	4,906	7%	52,748	80%	>70%	66,348	48%	>30%
	Projected	8,919	13%	4,864	7%	52,423	79%	>70%	66,206	45%	>30%
Boreal Foothills/Omineca	Current	18,402	8%	7,787	3%	209,507	89%	>80%	235,696	56%	>35%
	Projected	18,513	8%	7,635	3%	203,573	88%	>80%	229,721	55%	>35%
Wet Mountain	Current	2,300	3%	307	0%	75,599	97%	>85%	78,206	62%	>60%
	Projected	2,356	3%	317	0%	73,943	97%	>85%	76,616	67%	>60%

REVISIONS:

No revisions are suggested for this indicator or objective.

2.5 SNAGS/LIVE TREE RETENTION

Criterion 1:	Element(s): 1.1, 1.2
Biological Diversity	Ecosystem Diversity, Species Diversity
CSA Core Indicator(s): 1.1.4: Degree of within-stand structural retention 1.2.2: Degree of suitable habitat in the long term for selected focal species, including species at risk	
Indicator Statement	Target Statement
Number of snags and/or live trees (>23.0 cm dbh) per ha on prescribed areas	Retain annually an average of at least 2 snags and/or live trees (>23.0 cm dbh) per hectare on prescribed areas
Value(s): Ecosystem Diversity, Native Species Richness	
SFM Objective: We will conserve or restore ecosystem diversity within the natural range of variation within DFA over time. We will sustain sufficient and appropriately distributed suitable habitat elements to maintain native species richness.	

STATUS AND COMMENTS:

In the 2016 – 2017 reporting year, there were 33 blocks harvested to which this indicator applied; thirty were logged by Canfor and the remaining three were BCTS blocks. Of the Canfor harvested blocks there were no instances where snag/live tree retention was not implemented due to >10% of the gross block area being designated under Wildlife Tree Patch (WTP) as the habitat element (snags/live trees) are considered well represented in the WTP area. All 33 blocks all had snag/live tree retention prescribed for the blocks even though 9 blocks did not require the snag/live tree retention.

The BCTS blocks had both WTP area over 10% as well as the prescribed snag/live tree retention.

Block	Area of Required Snag/Live Tree Retention (ha)	Area of Snag/Live Tree Retention in SP (ha)	Applied Correctly	Rationale
T2096	12.1	12.1	Yes	WTP 3%
T2126	182.2	182.2	Yes	WTP % > 10% of block area
T2257	25.9	25.9	Yes	WTP % > 10% of block area
T2270	38.2	38.2	Yes	WTP 4.2%
T2271	22.1	0	Yes	WTP 4.7%
T2281	33.4	33.4	Yes	WTP % > 10% of block area
T2282	87.7	87.7	Yes	WTP 8.9%
T2284	100.6	100.6	Yes	WTP 5.5%
T2317	93.4	93.4	Yes	WTP 3.5%
T2322	51.7	51.7	Yes	WTP 5.3%
T2330	37.7	37.7	Yes	WTP 6.2%
T4225	42.8	42.8	Yes	WTP % > 10% of block area
T4233	28.6	28.6	Yes	WTP % > 10% of block area
T4234	26.5	26.5	Yes	WTP 3.7%
T4281	22.7	22.7	Yes	WTP 5.4%
T4329	71.6	71.6	Yes	WTP 7.9%
T4330	118.6	118.6	Yes	WTP 8.6%
T4331	29.8	29.8	Yes	WTP % > 10% of block area
T4332	10.9	10.9	Yes	WTP 6.8%
T4390	29.6	29.6	Yes	WTP 3.5%
T4391	58.8	58.8	Yes	WTP 0.6%
T4430	20.5	20.5	Yes	WTP 3.5%
T5045	154.7	154.7	Yes	WTP % > 10% of block area
T5050	176.0	176.0	Yes	WTP % > 10% of block area
T5053	65.5	65.5	Yes	WTP % > 10% of block area
T5059	121.0	121.0	Yes	WTP 4.1%
T5095	37.0	37.0	Yes	WTP 4.5%
T5096	28.8	28.8	Yes	WTP 3.9%
T5097	2.7	2.7	Yes	WTP 3.6%



T5098	28.1	28.1	Yes	WTP 3.5%
A92147	113.5	113.5	Yes	WTP % > 10% of block area
A92162	91.0	91.0	Yes	WTP 9.2%
A92162	73.4	73.4	Yes	WTP % > 10% of block area

REVISIONS:

No further revisions are suggested for this indicator or objective.

2.6 WILDLIFE TREE PATCHES

Criterion 1:	Element(s): 1.1
Biological Diversity	Ecosystem Diversity
CSA Core Indicator(s): 1.1.4: Degree of within-stand structural retention	
Indicator Statement	Target Statement
Cumulative wildlife tree patch percentage in blocks harvested since 1995 by landscape unit by BEC sub zone	Cumulative wildlife tree patch % will be at least 8% by BEC sub zone
Value(s): Ecosystem Diversity	
SFM Objective: We will conserve or restore ecosystem diversity within the natural range of variation within DFA over time.	

STATUS AND COMMENTS:

The table below summarizes the current status for WTP retention levels for blocks on which harvesting began since 1995 and to the end of March 31, 2017. The WTP retention levels now exceeds the target in all subzones. In the ESSFwc3 BEC subzone, 60% or 411 ha of the 689 ha under prescription at the time, had been harvested with an irregular shelterwood retention system. Typically in these irregular shelterwoods 55% of the area is retained between the trails so 55% of the 411 ha is 226 ha plus the 80 ha of WTP prescribed resulted in a total of 306 ha of retention or 34% of the total area under prescription. Therefore the target is considered achieved.

As harvesting continues in this BEC zone, WTP retention has continued to be implemented. The BEC zone now shows that even without considering the irregular shelterwood retention system, the zone is above the minimum required 8% target for WTP area. BEC zones approaching the minimum targets of 8% WTP will be monitored to ensure that the retention levels do not drop below the minimum 8%.

Table 7: Summary of WTP's in Areas Harvested Since 1995

BEC Sub Zone	Total Area Under Prescription (ha)	WTP Area (ha)	WTP %
BWBSmw	9,533	1,372	14%
BWBSwk	4,605	721	16%
ESSFmv	11,706	1,183	10%
ESSFwc	892	80	9%

ESSFwk	5,597	623	11%
SBSwk	16,327	2,384	15%
Total	48,660	6,362	13%

REVISIONS:

No revisions are suggested for this indicator or objective.

2.7 AVERAGE MINIMUM WIDTH OF RRZ AND RMZ

Criterion 1:	Element(s): 1.2, 3.2
Biological Diversity	Species Diversity; Water Quality and Quantity
CSA Core Indicator(s): 1.2.1: Degree of habitat protection for selected focal species, including species at risk 3.2.1: Proportion of watershed or water management areas with recent stand-replacing disturbance	
Indicator Statement	Target Statement
Average minimum width of retention by Riparian Reserve Zone or Riparian Management Zone by appropriate stream, lake or wetland classification within cutblocks	We will meet or exceed the regulatory retention widths by Riparian Reserve Zone by appropriate stream, lake or wetland classification within cutblocks
Value(s): Native Species Richness, Water Quality and Quantity	
SFM Objective: We will sustain sufficient and appropriately distributed suitable habitat elements to maintain native species richness. We will maintain water quality and quantity.	

STATUS AND COMMENTS:

The following table (Table 8) shows the summary of riparian reserve and management zones for the 2016 – 2017 year as well as the cumulative average from 2000 to the end of March 31, 2017. The targets have been met in 2016 - 2017 and all previous years. It should be noted that the RMZ actual widths for the cumulative 2000 to March 31, 2016 are showing averages below the required widths for some riparian classes. However, this is because the areas were managed under an RRZ and was not split between RRZ and RMZ. The total RMA is still exceeding the requirements in all Stream and Wetlands classes.

Table 8: Summary of Riparian Reserve and Management Zones in 2000 – 2016

Year	Stream, Wetland or Lake Class	Total Stream Length (m ^b)	RRZ – Required Width (m ^c)	RRZ–Actual Width (m ^c)	RMZ Required Width (m ^c)	RMZ – Actual Width (m ^c)	Total RMA – Required width (m ^b)	Total RMA – Actual width (m ^b)
2016-2017	S1 (n=0)	-	50	-	20	-	0	-
	S2 (n=3)	3,888	30	31.9	20	20.6	50	52.5
	S3 (n=4)	1,659	20	21.1	20	23.5	40	44.6
	S4 (n=4)	10,085	0	0.0	30	32.7	30	32.7

	S5 (n=6)	1,535	0	0.0	30	33.9	30	33.9
	S6 (n=89)	53,667	0	0.0	20	22.3	20	22.3
	W3 (n=3)	979	0	0.0	30	34.7	30	34.7
	W5 (n=0)	-	10	-	40	-	50	-
Average								
2000 to March 31, 2017	S1	34,694	50	104.4	20	4.8	70	109.2
	S2	42,799	30	71.7	20	15.7	50	87.4
	S3	64,768	20	36.9	20	18.6	40	55.5
	S4	40,526	0	3.6	30	29.1	30	32.7
	S5	76,112	0	10.4	30	30.3	30	40.7
	S6	648,746	0	2.9	20	20.5	20	23.4
	W3	7,597	0	3.9	30	28.3	30	32.2
	W5	673	10	1,935.3	40	192.1	50	2,127.5

a Channel widths for S1 streams are >20m, <100m.

b Streams that flow through, rather than adjacent to a block have had their lengths doubled to account for the application of RMA's to both sides. Therefore true stream length is less than reported in this table.

c RRZ and RMZ widths are applied to a single side of a stream. If stream flows through the block the length has been doubled (see footnote b) but the widths are not doubled.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.8 SHRUBS/EARLY FOREST

Criterion 1:	Element(s): 1.2
Biological Diversity	Species Diversity
CSA Core Indicator(s): 1.2.1: Degree of habitat protection for selected focal species, including species at risk	
Indicator Statement	Target Statement
The minimum proportion of shrub habitat (%) by Natural Disturbance Unit	Each Natural Disturbance Unit will meet or exceed the baseline target (%) proportion of shrub habitat (Table 20)
Value(s): Native Species Richness	
SFM Objective: We will sustain sufficient and appropriately distributed habitat elements to maintain native species richness.	

STATUS AND COMMENTS:

The following table indicates the initial condition of shrub habitat, in 2005, within the DFA. The status of shrub habitat at the end of 2015 is outlined in the table below as well. Within the Boreal Plains and Boreal Foothills NDU's there was an increase in the amount of shrub habitat over time while the Omineca and Wet Mountain NDUs showed no change in the amount of shrub

habitat from the Baseline target run in 2005. Harvesting activities have been significantly reduced in these NDUs in the past few years and so it is not surprising that the shrub habitat shows no change. Because shrubs are intimately associated with early seral forest, harvested area is a significant contributor to the amount of shrub habitat. Back in 2005 the forecast for the amount of shrub habitat was higher than the actual which can be largely attributed to the curtailment of the operations which saw a suspension of harvesting for a period of nearly 2 years.

It is anticipated that the next reporting period will contain a similar level of shrub habitat as the analysis considers forest stands less than 30 years of age as contributing to shrub area. Harvesting on the DFA began in 1986 which will represent 30 years of operations on the DFA in 2016. As managed stands become older than 30 years they will no longer contribute to shrub habitat which is why after 2016 it is anticipated that shrub habitat will remain in a relatively stable state and will most largely be impacted by natural disturbances such as fire. However, with the Mount McAllister fire in the late summer of 2014 burning approximately 26,280.8 ha in total including some area beyond the TFL boundaries, and concentrated harvesting within the Boreal Foothills NDU, it is expected that there will be an increase in shrub habitat in the Boreal Foothills NDU. This natural disturbance will contribute to the early seral forest bringing the proportion of shrub habitat well above the baseline target. The next time this indicator will be reported on will be in the 2020-2021 annual report.

Table 9: Shrub Habitat

NDU	NDU Subunit	Total NDU Area	Baseline Shrub Habitat		2015 Shrub		Baseline Target %
			Ha	%	Ha	%	
Boreal Plains		120,891	15,762	13%	19,169	16%	14%
Boreal Foothills	Valley	178,225	25,245	14%	30,177	17%	12%
	Mountain	205,406	20,936	10%	22,790	11%	11%
Omineca	Valley	6,504	727	11%	732	11%	7%
	Mountain	15,031	1,277	8%	1,219	8%	10%
Wet Mountain		117,618	12,634	11%	13,311	11%	7%
Grand Total		643,676	76,581	12%	87,397	14%	

REVISIONS:

No revisions are suggested for this indicator or objective.

2.9 WILDLIFE HABITAT AREAS, UNGULATE WINTER RANGES AND DUNLEVY CREEK MANAGEMENT PLAN

Criterion 1:	Element(s): 1.2, 1.4
Biological Diversity	Species Diversity; Protected Areas and Sites of Special Biological and Cultural Significance
CSA Core Indicator(s) 1.2.1: Degree of habitat protection for selected focal species, including species at risk 1.2.2: Degree of suitable habitat in the long term for selected focal species, including species at risk 1.4.1: Proportion of identified sites with implemented management strategies	
Indicator Statement	Target Statement
Proportion of activities consistent with objectives of Wildlife Habitat Areas (WHA), Ungulate Winter Ranges (UWR), and Dunlevy Creek Management Plan	All forest management activities will be consistent with objectives of Wildlife Habitat Areas (WHA), Ungulate Winter Ranges (UWR), and Dunlevy Creek Management Plan
Value(s): Native Species Richness, Protected Areas and Sites of Special Geological, Biological, or Cultural Significance	
SFM Objective: We will sustain sufficient and appropriately distributed suitable habitat elements to maintain native species richness. We will implement management strategies appropriate to the long term maintenance of protected areas and sites of special geological, biological, or cultural significance.	

STATUS AND COMMENTS:

In the 2016 – 2017 reporting year there were no activities within UWR's, WHA's, or the Dunlevy Creek Management Plan area. In the 2026 – 2017 reporting period plans have been started to assess the development opportunities that may be present in the Dunlevy Creek Management Plan area in response to the spruce bark beetle outbreak. Any proposed development will follow the guidelines as outlined in the Dunlevy Creek Management Plan written for the Dunlevy Creek area.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.10 HABITAT SUPPLY FOR SPECIES OF PUBLIC CONCERN

Criterion 1:	Element(s): 1.2
Biological Diversity	Species Diversity
CSA Core Indicator(s): 1.2.1: Degree of habitat protection for selected focal species, including species at risk 1.2.2: Degree of suitable habitat in the long term for selected focal species, including species at risk	
Indicator Statement	Target Statement
Habitat supply for species of public interest (grizzly bear, wolverine, marten, fisher, elk, moose, caribou)	When habitat supply decreases by 20% over time beyond the natural range of variation baseline for species of public interest, stand level management strategies will be developed within one year
Value(s): Native Species Richness	
SFM Objective: We will sustain sufficient and appropriately distributed suitable habitat elements to maintain native species richness.	

STATUS AND COMMENTS:

This indicator was first reported on in 2005 and was originally tied to the AAC/TSR process which occurred every 5 years. With government regulation changes AAC Determinations can occur between every 10 and 15 years. To remain consistent with the reporting frequency this indicator will no longer be tied to the AAC/TSR process and will be reported on every five years. These tables were updated for SFMP #5 and will be reported on again in the 2020-2021 annual report.

Moose was modeled for the summer feeding period. TFL 48 represents excellent moose habitat with over 340,000 ha classified in very high, high and moderate categories of habitat supply.

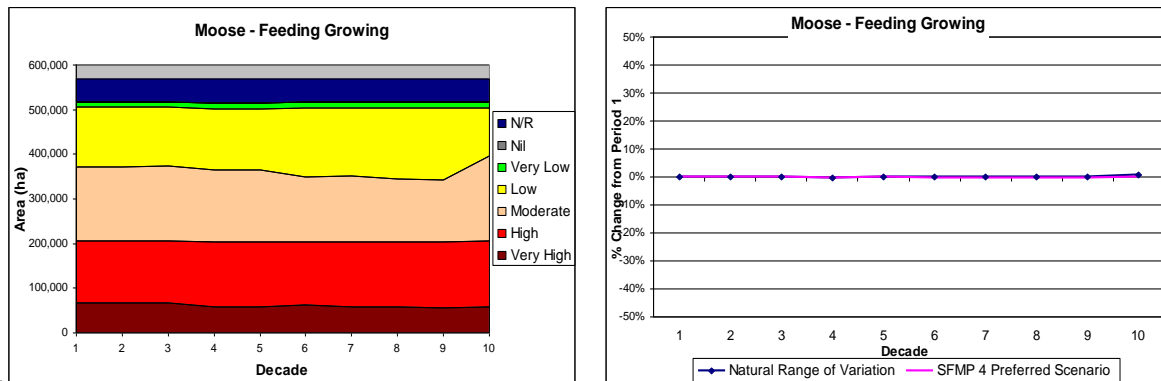


Figure 2: Moose Habitat Supply

Elk habitat was modeled as summer feeding habitat. TFL 48 represents excellent elk habitat with over 230,000 ha classified in very high, high and moderate categories of habitat supply.

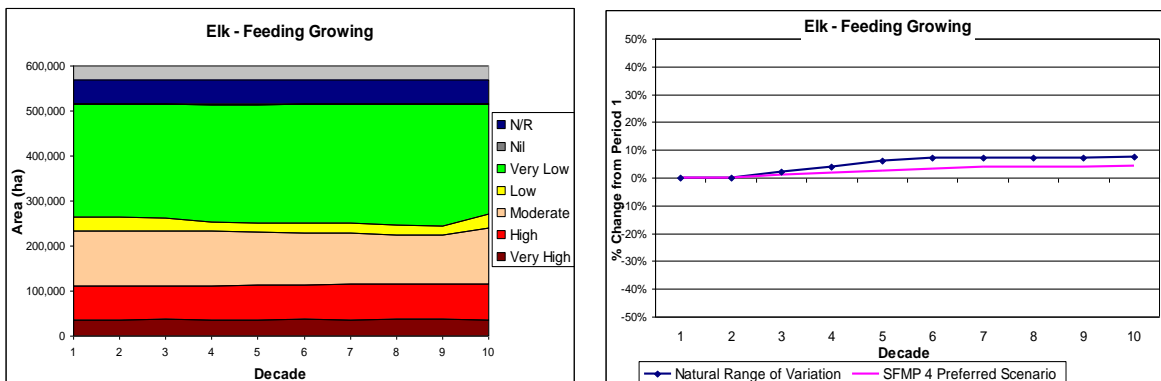


Figure 3: Elk Habitat Supply

Caribou was modeled for both late and early winter habitat types. In contrast to moose and elk there is comparatively little very high, high and moderate habitat for caribou, approximately 15,000 ha of early winter. (This is likely underrepresented with the current model.) Late winter habitat trends to a significantly less amount in the preferred scenario versus the natural range of variation baseline.

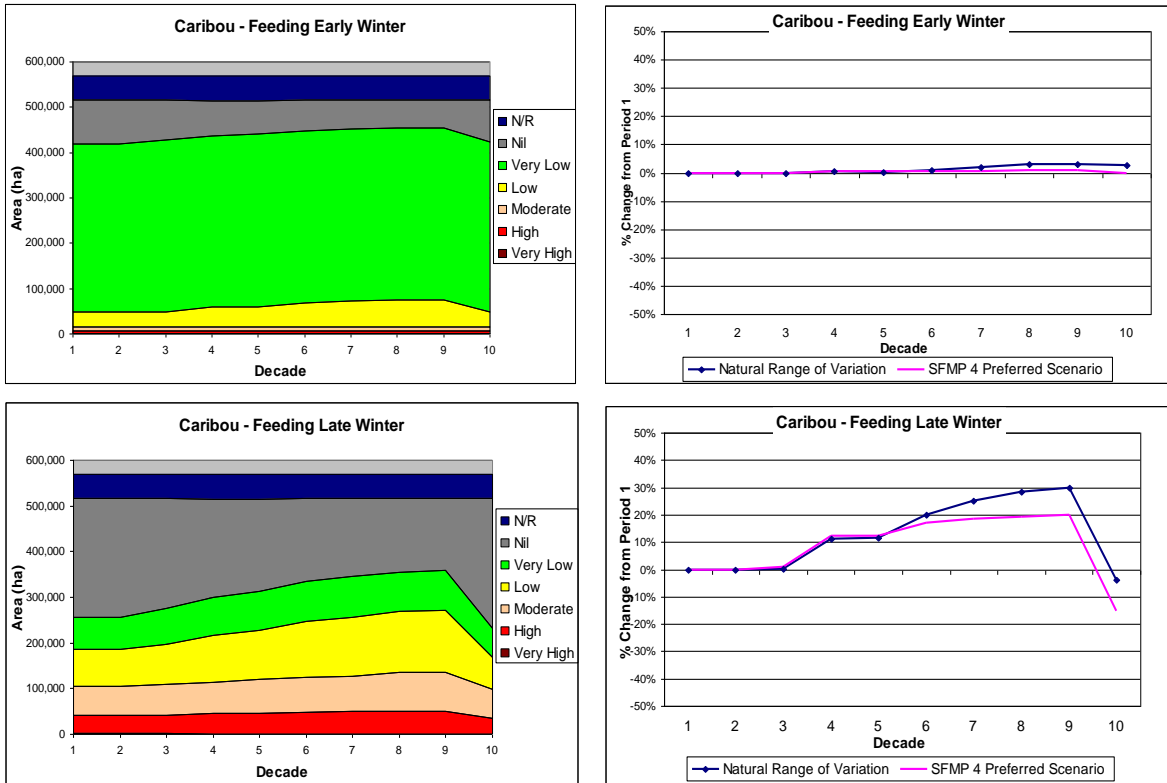


Figure 4: Caribou Habitat Supply

Marten habitat was modeled as general winter habitat. TFL 48 has a large amount of habitat (over 250,000 ha) modeled as very high, high and moderate. While habitat steadily declines over the 100 year simulation the preferred scenario has less of a decline than the natural range of variation simulation.

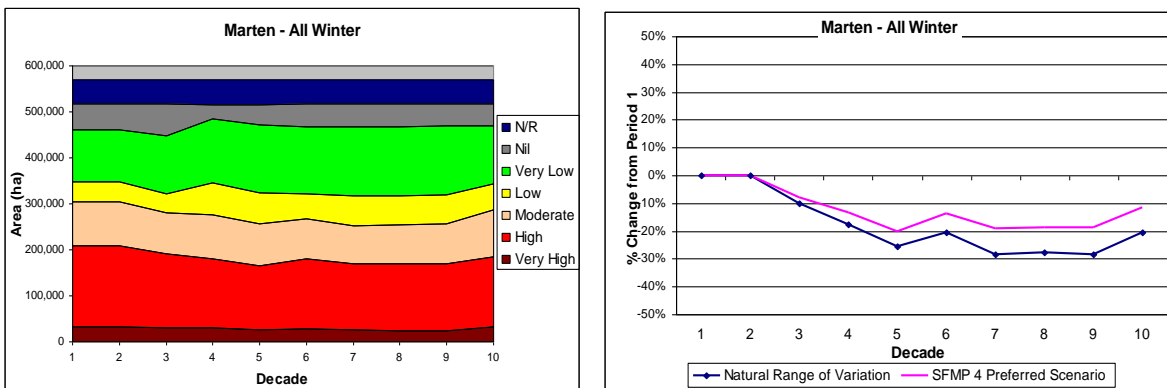


Figure 5: Marten Habitat Supply

Fisher habitat was modeled as general winter habitat. TFL 48 represents a large area of very high, high and moderate habitat with over 196,000 ha classified in these categories.

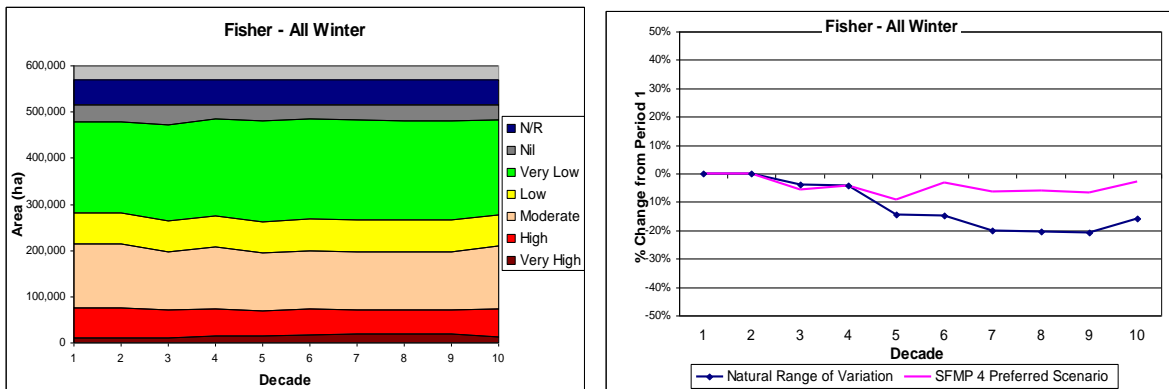


Figure 6: Fisher Habitat Supply

Grizzly bear habitat was modeled as spring feeding habitat. TFL 48 has a moderate amount of very high, high and moderate grizzly bear habitat with over 111,000 ha classified in these categories.

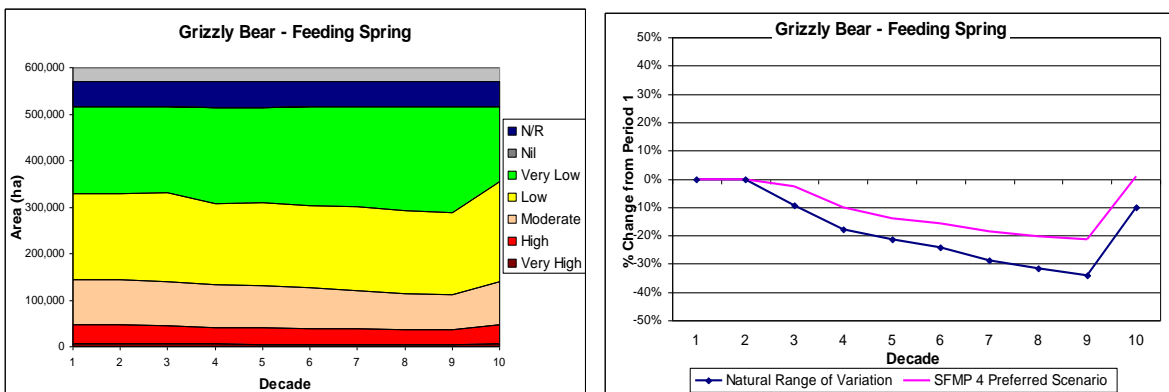


Figure 7: Grizzly Bear Habitat Supply

Wolverine habitat was modeled as winter feeding habitat. TFL 48 represents an excellent area for wolverine with over 440,000 ha modeled as high and moderate habitat quality. Again while the trend is for a decline in the overall amount of high quality habitat the preferred scenario shows less of a decline than the natural range of variation.

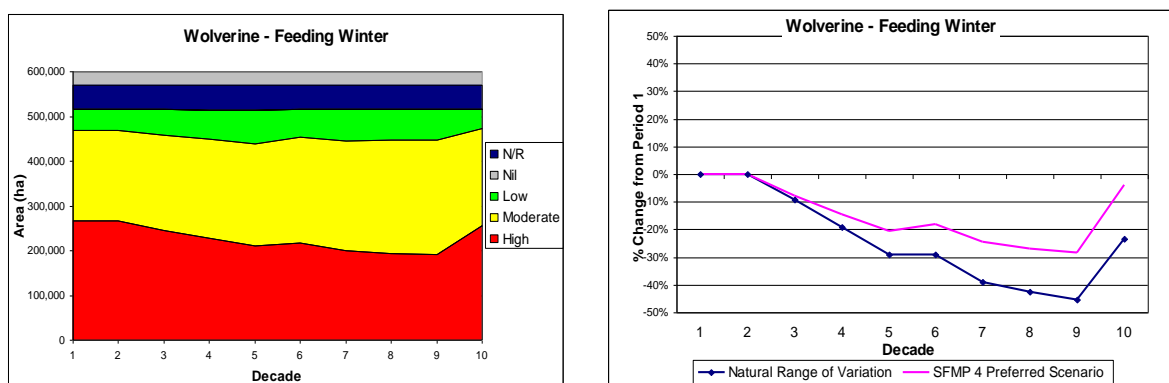


Figure 8: Wolverine Habitat Supply

REVISIONS:

Indicator will no longer be linked to the AAC/TSR process as AAC timelines have extended beyond meaningful data analysis time frames for this Indicator. This indicator will remain on a 5 year reporting schedule and will be reported on again in the 2020-2021 annual report.

2.11 SPECIES OF MANAGEMENT CONCERN

Criterion 1:	Element(s): 1.2
Biological Diversity	Species Diversity
CSA Core Indicator(s): 1.2.1: Degree of habitat protection for selected focal species, including species at risk 1.2.2: Degree of suitable habitat in the long term for selected focal species, including species at risk	
Indicator Statement	Target Statement
Percent consistency with management strategies for species of management concern	On an annual basis, 100% of the management strategies for species of management concern are consistently being implemented as scheduled
Value(s): Native Species Richness	
SFM Objective: We will sustain sufficient and appropriately distributed suitable habitat elements to maintain native species richness.	

STATUS AND COMMENTS:

The implementation strategy for this indicator was to implement stand level management guidelines on all areas where layout was initiated after October 31, 2005. Between April 1, 2016 and March 31, 2017, there were 30 new blocks laid out. None of these blocks were in areas of, or contained environmental aspects of significance to the wildlife identified in the document *Guidelines for Species Using Localized Habitats for TFL48*.

REVISIONS:

This indicator was queried on both the field package and layout activity so that all blocks that were laid out and permitted were captured in the data set. This way the data can be properly analyzed through the site plan to see if any species of concern were noted on the block at the time of layout.

Below is a table that will now be part of the annual reporting for this indicator. The table contains a list of species that are provincially listed as being at some sort of risk of declining and whose habitat range includes TFL 48. This list guides our species accounting system and will be monitored and updated annually.

Table 10: TFL 48 Species at Risk

English Name	Scientific Name	COSEWIC ¹	BC CDC List ²	IWMS ³
AMPHIBIANS				
Western Toad	<i>Bufo boreas</i>	Special Concern (Nov 2012)	Blue	
Wood Frog	<i>Lithobates sylvaticus</i>		Yellow	
FISH				
Bull Trout	<i>Salvelinus confluentus</i>	Special Concern (Nov 2012)	Blue	Yes (Jun 2006)
Northern Redbelly Dace	<i>Chrosomus eos</i>		Blue	
Pearl Dace	<i>Margariscus nachtriebi</i>		Blue	
Spottail Shiner	<i>Notropis hudsonius</i>		Red	
BIRDS				
American Bittern	<i>Botaurus lentiginosus</i>		Blue	
American Three-toed Woodpecker	<i>Picoides dorsalis</i>		Yellow	
Barn Swallow	<i>Hirundo rustica</i>	Threatened (2011)	Blue	
Barrow's Goldeneye	<i>Bucephala islandica</i>		Yellow	
Bay-breasted Warbler	<i>Setophaga castanea</i>		Red	Yes
Black-backed Woodpecker	<i>Picoides arcticus</i>		Yellow	
Black-throated Green Warbler	<i>Setophaga virens</i>		Blue	Yes
Broad-winged Hawk	<i>Buteo platypterus</i>		Blue	
Brown Creeper	<i>Certhia americana</i>		Yellow	
Canada Warbler	<i>Cardellina canadensis</i>	Threatened (2008)	Blue	
Cape May Warbler	<i>Setophaga tigrina</i>		Blue	Yes
Common Nighthawk	<i>Chordeiles minor</i>	Threatened (2007)	Yellow	
Connecticut Warbler	<i>Oporornis agilis</i>		Blue	Yes
Harlequin Duck (western population)	<i>Histrionicus histrionicus</i>		Yellow	
Nelson's Sparrow	<i>Ammodramus nelsoni</i>		Red	Yes
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Threatened (2007)	Blue	
Peregrine Falcon, anatum subspecies	<i>Falco peregrinus anatum</i>	Special Concern (2007)	Red	
Rusty Blackbird	<i>Euphagus carolinus</i>	Special Concern (2006)	Blue	
Sandhill Crane	<i>Grus canadensis</i>		Yellow	Yes
Short-eared Owl	<i>Asio flammeus</i>	Special Concern (2008)	Blue	Yes
Surf Scoter	<i>Melanitta perspicillata</i>		Blue	
Swainson's Hawk	<i>Buteo swainsoni</i>		Red	
Yellow Rail	<i>Coturnicops noveboracensis</i>	Special Concern (2009)	Red	
MAMMALS				
Caribou (northern mountain population)	<i>Rangifer tarandus</i> pop. 15	Special Concern (2002)	Blue	Yes
Fisher	<i>Martes pennanti</i>		Blue	Yes
Grizzly Bear (western population)	<i>Ursus arctos</i>	Special Concern (2012)	Blue	Yes

Mountain Goat	Oreamnos americanus		Blue	
Northern Myotis	Myotis septentrionalis	Endangered (2013)	Blue	
Wolverine, luscus subspecies	Gulo gulo luscus	Special Concern (2003)	Blue	Yes

- 1 Committee on the Status of Endangered Wildlife in Canada:
www.speciesatrisk.gc.ca
- 2 BC Conservation Data Center's Species and Ecosystem Explorer
- 3 IWMS - Identified Wildlife Management Strategy

2.12 CONIFEROUS SEEDS

Criterion 1:	Element(s): 1.2, 1.3
Biological Diversity	Species Diversity, Genetic Diversity
CSA Core Indicator(s): 1.2.3: Proportion of regeneration comprised of native species 1.3: Genetic Diversity – No core indicator	
Indicator Statement	Target Statement
The proportion of seeds for coniferous species collected and seedlings planted in accordance with the regulation	All coniferous seeds will be collected and seedlings will be planted in accordance with the regulations
Value(s): Native Species Richness, Genetic Diversity	
SFM Objectives: We will conserve genetic diversity of tree stock.	

STATUS AND COMMENTS:

In 2016 there were approximately of 3,781,747 trees planted on TFL 48 by Canfor and BCTS. Canfor planted 3,489,247 and BCTS planted 317,700 trees. No planting activities took place on the TFL by LP, as there has been no harvesting by LP on the TFL since 2014. All seeds have been registered with and tracked by the Tree Improvement Branch of the Ministry of Forests Lands and Natural Resource Operations. Licensees operating on TFL 48 were % in compliance with the Chief Forester's Standards for Seed Use effective April 1, 2005. The Standard requires that practices be in 95% or greater conformance which has been achieved. All of the non-compliances were trees that were known, or thought to have been, planted outside of the designated Seed Planning Zone.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.13 DECIDUOUS SEEDS AND VEGETATIVE MATERIAL

Criterion 1:	Element(s): 1.2, 1.3
Biological Diversity	Species Diversity, Genetic Diversity
CSA Core Indicator(s): 1.2.3: Proportion of regeneration comprised of native species 1.3: Genetic Diversity – No core indicator	
Indicator Statement	Target Statement
The proportion of seed or vegetative material for deciduous species collected and planted in accordance with the regulation	All deciduous species will be collected and planted in accordance with the regulations
Value(s): Native Species Richness, Genetic Diversity	

SFM Objectives:

We will conserve genetic diversity of tree stock.

STATUS AND COMMENTS:

There were no deciduous seedlings or vegetative propagates planted on TFL 48 in 2016. Seed lots grown or planted within TFL 48 will be registered in accordance with the Forest Planning and Practices Regulation and the Chief Forester’s Standards for Seed Use effective April 1, 2005. All seeds used in TFL 48 by Canfor and BCTS will be registered with and tracked by Tree Improvement Branch of the Ministry of Forests and Range.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.14 CLASS A PARKS, ECOLOGICAL RESERVES AND LRMP DESIGNATED PROTECTED AREAS

Criterion 1:	Element(s): 1.4
Biological Diversity	Protected Areas and Sites of Special Biological and Cultural Significance
CSA Core Indicator(s): 1.4.1 Proportion of identified sites with implemented management strategies	
Indicator Statement	Target Statement
Hectares of forestry related harvesting or road construction within Class A parks, protected areas, ecological reserves and LRMP designated protected areas	Zero hectares of forestry related harvesting or road construction within Class A parks, protected areas, ecological reserves or LRMP designated protected areas
Value(s): Protected Areas and Sites of Special Geological, Biological, or Cultural Significance	
SFM Objective: We will implement management strategies appropriate to the long term maintenance of protected areas and sites of special geological, biological, or cultural significance.	

STATUS AND COMMENTS:

Between April 1, 2016 and March 31, 2017 there was no harvesting or road construction for the purposes of carrying out forestry operations within Class A parks, protected areas, ecological reserves or LRMP designated protected areas within TFL 48.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.15 KNOWN VALUES AND USES ADDRESSED IN OPERATIONAL PLANNING

Criterion 1:	Element(s): 1.4, 6.1, 6.2
Biological Diversity	Protected Areas and Sites of Special Biological and Cultural Significance; Aboriginal and Treaty Rights; Respect for Aboriginal Forest Values, Knowledge and Uses
<p>CSA Core Indicator(s): 1.4.2 Protection of identified sacred and culturally important sites</p> <p>6.1.3: Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur</p> <p>6.2.1: Evidence of understanding and use of Aboriginal knowledge through the engagement of willing Aboriginal communities, using a process that identifies and manages culturally important resources and values</p>	
Indicator Statement	Target Statement
Percentage of known traditional site-specific aboriginal values and uses identified during SFMP, FDP, FSP, or PMP referrals addressed in operational plans	100% of known traditional site-specific aboriginal values and uses identified during SFMP, FDP, FSP, or PMP referrals will be addressed in operational plans
Value(s): Protected Areas and Sites of Special Geological, Biological, or Cultural Significance; Treaty and Aboriginal Rights; Aboriginal Forest Values and Uses	
<p>SFM Objective:</p> <p>We will implement management strategies appropriate to the long term maintenance of protected areas and sites of special geological, biological, or cultural significance.</p> <p>We will recognize and respect Treaty 8 rights.</p> <p>We will respect known traditional Aboriginal forest values, and uses.</p>	

STATUS AND COMMENTS:

During the 2016-2017 reporting year, site specific comments provided by First Nations regarding aboriginal values and uses were considered and addressed in operational plans. Fifteen cutting blocks were found to have site specific concerns which resulted in discussions between Canfor and the First Nations to address concerns and propose mitigation strategies. Later this year, a mutually acceptable resolution was been reached and so all blocks were passed on to the Delegated Decision Maker for a decision on the cutting permit application.

A number of other blocks that were information shared throughout the 2016-2017 years were identified by First Nations as having traditional use values and so numerous meetings and email discussions allowed for mitigation strategies to be developed to protect and/or mitigate potential impacts from harvesting operations. For blocks that are information shared and allocated to the BCTS program, comments provided by First Nations are passed on to BCTS.

Canfor has proposed development in the Trapper Creek valley in the TFL and this area is considered to be of high traditional and cultural use by many First Nations. Ahead of any cutting permit applications, this area is being discussed in great depth to understand and address the concerns brought forward by First Nations. Numerous studies are taking place to address concerns and those results are being shared with First Nations as studies are completed.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.16 CONFORMANCE TO ELEMENTS PERTINENT TO TREATY RIGHTS

Criterion 1:	Element(s): 1.4, 6.1
Biological Diversity	Protected Areas and Sites of Special Biological and Cultural Significance; Aboriginal and Treaty Rights
<p>CSA Core Indicator(s): 1.4.2 Protection of identified sacred and culturally important sites</p> <p>6.1.3: Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur</p>	
Indicator Statement	Target Statement
% conformance to SFM elements pertinent to treaty rights (i.e., hunting, fishing and trapping) defined in Treaty 8	<p>100% conformance to the SFM indicators and targets of the SFM Elements pertinent to sustaining hunting, fishing and trapping, as follows:</p> <ul style="list-style-type: none"> • Element 1.1 Ecosystem Diversity (Indicators 3.1, 3.2, 3.3, and 3.4), and Element 1.2 Species Diversity (Habitat Elements) Indicators (3.5, 3.6, 3.7, 3.8, and 3.10), • Element 3.1 Soil Quality and Quantity (Indicator 3.27), and • Element 3.2 Water Quality and Quantity Indicators (3.28, 3.29, 3.30, 3.31, and 3.32)
Value(s): Protected Areas and Sites of Special Geological, Biological, or Cultural Significance; Treaty and Aboriginal Rights	
<p>SFM Objective:</p> <p>We will implement management strategies appropriate to the long term maintenance of protected areas and sites of special geological, biological, or cultural significance. We will recognize and respect Treaty 8 rights.</p>	

STATUS AND COMMENTS:

For the 2016-2017 reporting period all indicators in Elements 1.1, 1.2, 3.1, and 3.2 were met.

Only one indicator in Element 3.1 (Indicator 3.27) was not met. Though all the Site Plans prescribe the appropriate coarse woody debris management, the indicator itself takes into account the actual data collected from established plots in the coarse woody debris sample plots. In 2013 there were no sampling plots that fell into the grid and so no data was available for that year. The sample in the 2015 – 2016 reporting period only measured 2 plots which both showed an average of 48 m³/ha of CWD. Overall this brings the actual data for CWD below the target for this indicator (average retention level over the TFL since Jan 1, 2004 will be at least 92 m³/ha of which a minimum of 46 m³/ha will be greater than 17.5cm in diameter). In the 2016 – 2017 reporting year, the CWD sample average was 181 m³/ha which shows the expected trend moving in the right direction. As the sample sizes continue to increase the trend should begin showing that the CWD retention on the TFL is headed back to the target. Since indicator 3.27 is considered not met, this indicator is also considered not met.

Canfor and BCTS continue to maintain their obligation to consult with First Nations on every herbicide program each year. Canfor has also put measures in place since the 2011 spray program to mitigate the potential for over sprays into water bodies in the future. Since 2014 there have been no incidences of over spray into water bodies by either Canfor or BCTS.

REVISIONS:

No revisions are suggested for this indicator or objective.

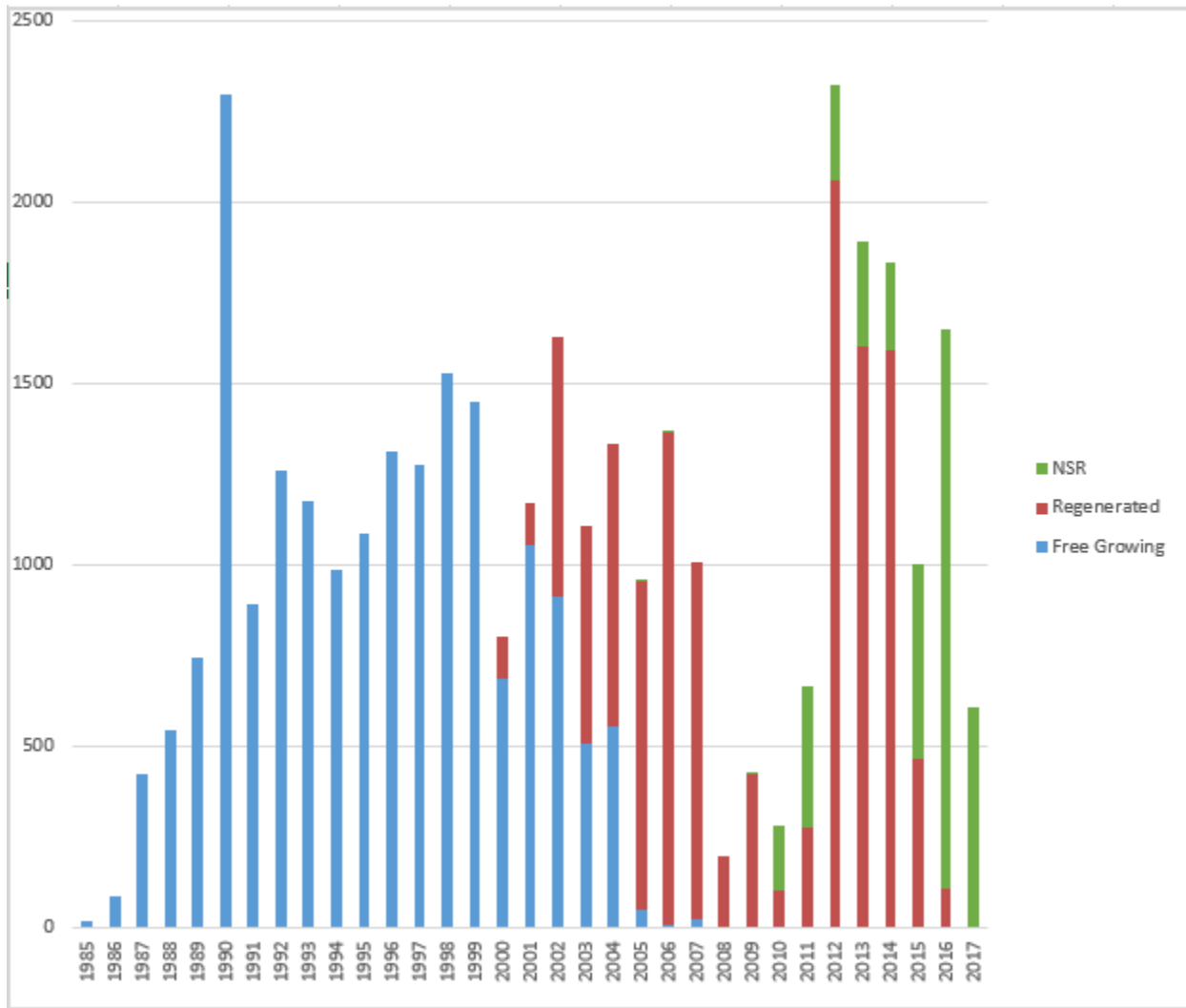
2.17 FREE GROWING STANDS

Criterion 2:	Element(s): 2.1
Ecosystem Condition and Productivity	Forest Ecosystem Resilience
CSA Core Indicator(s): 2.1.1 Reforestation success	
Indicator Statement	Target Statement
Proportion of area harvested that has free growing stands re-established	100% of the area harvested will meet the free growing requirements identified in the silviculture prescriptions/site plans
Value(s): Ecosystem Resilience	
SFM Objectives: We will sustain a natural range of variability in ecosystem function, composition and structure which allows ecosystems to recover from disturbance and stress.	

STATUS AND COMMENTS:

All areas harvested have met free growing requirements as identified in the silviculture prescriptions/site plans. No areas have gone past the free growing timelines without achieving free growing requirements. See Figure 9 for status of areas harvested on TFL 48 where there is a free growing requirement. All areas on the TFL that show as NSR will be monitored to ensure they do not go beyond their free growing dates. Currently one block (56.3 ha) does not meet the free growing requirements however it is expected that the crop trees will out compete the competing vegetation eventually. If it looks like the block might not reach free growing, then an action plan will be developed where the free growing dates may be amended or treatments implemented to ensure that free growing requirements are achieved. Approximately 200 ha on the TFL are scheduled to be re-planted. Some of these areas may require herbicide treatments this year before planting to allow those areas to reach free-grow status by the deadline.

Figure 9: Regeneration/Free Growing Status by Year of Harvest Start



REVISIONS:

No revisions are suggested for this indicator or objective.

2.18 REGENERATION DECLARATION

Criterion 2:	Element(s): 2.1, 4.1
Ecosystem Condition and Productivity	Forest Ecosystem Resilience; Carbon Uptake and Storage
CSA Core Indicator(s): 2.1.1 Reforestation success	
Indicator Statement	Target Statement
Area weighted average time delay from harvesting starting and initial restocking of harvest area by DFA	Average delay will be no more than 2 years
Value(s): Ecosystem Resilience, Carbon Uptake and Storage	
SFM Objectives: We will sustain a natural range of variability in ecosystem function, composition and structure which allows ecosystems to recover from disturbance and stress. We will maintain the processes for carbon uptake and storage within the natural range of variation.	

STATUS AND COMMENTS:

At the end of March 31, 2016 the average age of NSR on TFL 48 was 0.73 years for all areas where harvesting started prior to April 1, 2016. The average regeneration delay is therefore less than 2 years and so the target has been achieved. For the period between April 1, 2016 and March 31, 2017, the average age of regen delay is 0.36 years.

Blocks that had the conventional portion harvested were re-planted and the areas that were left for harvest by cable have been left until the cable portion has been planted. As areas harvested have been planted, all blocks are considered in compliance.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.19 AREA OF FORESTED LAND LOST TO NON-FOREST INDUSTRY

Criterion 2:	Element(s): 2.2, 4.2
Ecosystem Condition and Productivity	Forest Ecosystem Productivity, Forest Land Conversion
CSA Core Indicator(s): 2.2.1 Additions and deletions to the forest area	
Indicator Statement	Target Statement
Area of forested land lost due to non-forest industry	We will track, and monitor and report every 3 years, losses to other non-forest industry uses and incorporate these losses when AAC calculations are determined.
Value(s): Ecosystem Productivity, Forested Land Base	
SFM Objective: We will sustain forests within the DFA.	

STATUS AND COMMENTS:

This indicator was last reported on in 2010. After the accepted revision to the 2011 matrix, this indicator is to be updated every three years requiring this information to be updated and reported for the 2014 – 2015 reporting year.

During the term of MP 3 Canfor developed a spatial tracking system to identify what and where non-forest related activities were occurring within TFL 48. All activities proposed within TFL 48 are typically referred to Canfor. With substantial changes to industry users, company ownership, and key industry contacts it has become increasingly difficult to analyze other resource development based on referrals made to Canfor. This is also due in part, to the fact that referrals are often sent requesting comments on potential impacts, but often development does not occur therefore the area that we think has been developed may not actually be disturbed.

As such, the analysis used to determine the amount of forest land converted has utilized various government data bases which track other resource tenures. The following table shows reductions to the land base due to other uses. It is useful to note that industry, in efforts to minimize the amount of forest land converted to non-forest, attempt to locate sequential developments overtop existing developments. Preliminary analysis of this indicator shows that this may have been previously over estimated.

The next time this indicator will be updated will be in 2017 and reported in the 2017 – 2018 annual report.

Table 11: Reductions to Land Base Due to Other Uses (Excluding Roads¹)

Feature	Total Area (ha)
Well sites ²	464
Mines ³⁴	2,166
Pipelines	466
Cutlines	1,527
Trails	492
Transmission Lines	980
Grand Total	6,095

REVISIONS:

No revisions are suggested for this indicator or objective.

2.20 PERMANENT ACCESS CORRIDORS

Criterion 2:	Element(s): 2.2, 4.2
Ecosystem Condition and Productivity	Forest Ecosystem Productivity; Forest Land Conversion
CSA Core Indicator(s): 2.2.1 Additions and deletions to the forest area	
Indicator Statement	Target Statement
Percent of area of the DFA occupied by permanent access corridors associated with forest	We will limit impacts on the land base due to the presence of permanent access corridors to less

¹ Roads are captured in Indicator 20 and are not easily separated as to which are used only by other industries or which are used only by the forest industry.

² Includes camps, decking areas, borrow pits and sumps

³ Includes mines where clearing had started prior to December 2004 (Quintette, Pine Valley Coal and Dillon Mine). Other proposed mines are included as a sensitivity analysis.

⁴ Includes roads within mine-cleared areas.

⁵ Updated VRI data used, operational roads and Block Perm roads reduced in RoW width from 2004 data due to newer methods of analysing data and collecting actual measurements.

management activities	than 2.4% of the gross land base of the DFA
Value(s): Ecosystem Productivity, Forested Land Base	
SFM Objective: We will sustain forests within the DFA.	

STATUS AND COMMENTS:

Previously the data analysis for this indicator occurred when the Timber Supply Analysis/Review was conducted in support of determining the next AAC Determination for the DFA. Government regulation changes had extended the period between AAC determinations which had lengthened the reporting period for this particular indicator. A revision accepted by the PAC removed the indicator reporting time from the AAC/TSR process to a 5 year reporting schedule.

The following table shows the status to the end of 2015. The data used in the 2015-2016 reporting year, was taken from the most updated VRI (2015), along with existing GPS'd road data, data collected and made available by individual oil and gas companies downloaded from the BCGW and from shapefiles sent when various users sent referrals to Canfor for operations being conducted on the TFL.

Table 12: Permanent Access Corridors in TFL 48 (Existing)

Road Type (RoW width in metres)	Total Area (ha)	% of Gross TFL Area (653,576 ha)
Undistinguished Road type but delineated in VRI	1,046	0.16%
1 - ML (25m)	2,382	0.36%
2 - Operational (15m)	2,291	0.35%
3 - Block Perm (8m)	2,836	0.43%
4 - Oil & Gas/Utility roads (10m)	952	0.15%
Grand Total	7,973	1.45%

Source VRI 2015

REVISIONS:

This indicator remains on a 5 year reporting schedule and will be updated and reported in the 2020-2021 annual report.

No revisions are suggested for this indicator or objective.

2.21 HARVEST LEVELS/VOLUMES

Criterion 2:	Element(s): 2.2, 5.1
Ecosystem Condition and Productivity	Forest Ecosystem Productivity; Timber and Non-Timber Benefits
CSA Core Indicator(s): 2.2.2: Proportion of the calculated long-term sustainable harvest level that is actually harvested	
5.1.1: Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	
Indicator Statement	Target Statement
Harvest levels/volumes	Harvest volumes will not exceed 110% of the 5 year periodic cut control volume for the DFA
Value(s): Ecosystem Productivity, Timber and Non-Timber Multi-Use Benefits	

SFM Objective:

We will sustain forests within the DFA.

We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.

STATUS AND COMMENTS:

As outlined in Table 13 below, Canfor did not overcut on the TFL in the reporting period between April 1, 2016 and March 31, 2017. Canfor logged 69.1% in 2017 which is well below the overall target of 110% for the five year cut control period. As we have just started a new 5 year cut control period this is expected.

BCTS has started this cut control period significantly lower in their apportionment on the TFL but should begin to make up for the significant undercut they have been in for the past number of years through volume allocation on the TFL. While the sale of licenses had not increased in the past 5 year cut control period, the volume they have been owed over the past few years has been allocated to them to make available for sales. BCTS remains in a deficit for their apportionment at 35.9% for the 2012-2016 cut control period and currently sits at 14% of their target for the 2017 year. BCTS will continue to develop sales to bring their harvest levels back on track for their apportionment on the TFL.

In the past 2 reporting years, there has not been any deciduous harvested from the TFL.

Table 13: Actual Recorded and Allowable Annual Cut Summary

Year	Canfor Annual Cut Summary				BCTS Summary ²			Deciduous Harvest Summary
	Allowable Annual Cut (m ³)	Adjustment (m ³)	Actual Recorded Cut (m ³)	Cut Control (%)	Direct Allocation (m ³)	Actual Recorded Cut (m ³)	Allocation (%)	
1987-1991	1,742,500		1,787,732.00	102.6%				
1992-1996	1,742,500	-41,572.00	1,659,920.50	95.3%				
1997-2001	2,025,193	82,580.00	1,953,224.20	96.4%				
2002-2006	2,331,850	57,575.04	2,344,509.91	100.5%	276,750.00	197,997.25	71.5%	66,084.52
2007-2011	3,311,101	0.00	1,719,885.00	51.9%	290,546.00	358,267.00	123.3%	252,155.00
2012-2016	4,044,527	282,137	3,762,390	93.0%	739,720	265,588	35.9%	92,547.00
2017	1,203,613	0	831,480	69.1%	246,387	34,484	14%	0
2018	1,203,613				246,387			
2019	1,203,613				246,387			
2020	1,203,613				246,387			
2021	1,203,613				246,387			
Running Total	6,018,065	0	831,480	69.1%	1,231,935	34,484	14%	0

Source: MoF Annual Cut Control Letters (1987-2006)

1 Note that this value represents the Ministries official billed volume. However based on Canfor's records the volume delivered to Canfor's scale was 431,324 m³ or 89.7% of the AAC. The difference is due to some problems with the Ministry's billing of stumpage at the end of the cut control annual period. The MoF reported this volume in 2004.

- 2 BCTS volumes were reported using the MoFR Harvest Billing System reports.
- 3 This value represents the volume delivered from A77788 in 2005 as reported in the MoFR Harvest Billing System (HBS).
- 4 This value represents the volume delivered from A77788 in 2006 as reported in the MoFR Harvest Billing System (HBS).
- 5 This value represents the volume delivered as reported in the MoFR Harvest Billing System (HBS)

REVISIONS:

No revisions are suggested for this indicator or objective

2.22 ALLOWABLE ANNUAL CUT

Criterion 2:	Element(s): 2.2
Ecosystem Condition and Productivity	Forest Ecosystem Productivity
CSA Core Indicator(s): 2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested	
Indicator Statement	Target Statement
Allowable Annual Cut (AAC)	We will ensure that the Allowable Annual Cut will not adversely impact Long Term Harvest Level
Value(s): Ecosystem Productivity	
SFM Objective: We will sustain forests within the DFA.	

STATUS AND COMMENTS:

The current AAC is based on the TSR Analysis Report completed and submitted in August 2006, and the AAC Rationale which was effective May 25th, 2007. See Table 14 for a history of the AAC's for TFL 48. The Deputy Chief Forester chose to increase the AAC slightly beyond what Canfor had requested to enable additional Mountain Pine Beetle salvage. This level does not jeopardize the Long Term Harvest Level.

The focus for timber harvest on TFL 48 in the past few years and into the future is on pine leading stands. The actual proportion of pine volume harvested is less than the goal because of the mixed nature of the Pine/Spruce forests across the THLB as well as the condition of the majority of pine leading stands being identified and reccied for harvest. The majority of the pine volume left on the TFL is in more mixed stands and therefore we are tending to harvest more incidental spruce volume as we log the dead pine stands. As predicted with this indicator, this trend is continuing as we move north into the more mountainous areas containing more mixed pine/spruce stands.

Canfor will continue to target the highest volume Pine stands on the TFL in order to address the mountain pine beetle epidemic and manage the midterm timber supply. An expedited Timber Supply Review (TSR) was conducted in 2013-2014 as part of the requirements in requesting an uplift in harvest levels for TFL 48 which shows that a higher level of cut could be supported on the TFL without negatively impacting the midterm timber supply. October 15, 2015, saw a decision made on the Allowable Annual Cut which increased the AAC for TFL 48 to 1,550,000 mill m³ which includes a 100,000 m³ cut which allows for the harvest of both deciduous and coniferous trees within deciduous-leading stands. This uplift will only be in effect for 5 years ending in October 2020. After October 2020, the AAC will then be reduced to 871,000 m³ which will continue to include the 100,000 m³ cut which allows for the harvest of both deciduous and

coniferous trees within deciduous-leading stands. For the 2016-2017 annual report the AAC has been updated as shown in Table 14.

Table 14: Annual Allowable Cut and Long-Term Harvest Level

Partition	MP 1	MP 2	SFMP 3	SFMP 4	SFMP 5
	AAC	AAC	AAC	AAC	AAC
Coniferous	410,000	460,000	525,000	800,000	1,450,000
Deciduous	0	54,000	55,000	100,000	100,000
Total	410,000	514,000	580,000	900,000	1,550,000

REVISIONS:

No revisions are suggested for this indicator or objective.

2.23 SOIL DEGRADATION

Criterion 3:	Element(s): 3.1
Soil and Water	Soil Quality and Quantity
CSA Core Indicator(s): 3.1.1 Level of soil disturbance	
Indicator Statement	Target Statement
Soil degradation	We will not exceed site degradation guidelines as defined in site plans
Value(s): Soil Productivity	
SFM Objective: We will protect soil resources to sustain productive forests.	

STATUS AND COMMENTS:

In TFL 48 there were a total of 33 blocks with harvesting completed in 2016-2017 reporting year between BCTS and Canfor. All blocks harvested were within the site degradation guidelines defined in site plans.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.24 SOIL DISTURBANCE SURVEYS

Criterion 3:	Element(s): 3.1
Soil and Water	Soil Quality and Quantity
CSA Core Indicator(s): 3.1.1 Level of soil disturbance	
Indicator Statement	Target Statement
Soil disturbance surveys	We will not exceed soil disturbance limits within cutblocks as defined in site plans
Value(s): Soil Productivity	
SFM Objective: We will protect soil resources to sustain productive forests.	

STATUS AND COMMENTS:

There were a total of 33 blocks with harvesting completed between April 1, 2016 and March 31, 2017 between BCTS, and Canfor. All blocks harvested were within the soil disturbance limits defined in site plans.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.25 USE OF ENVIRONMENTALLY FRIENDLY LUBRICANTS

Criterion 3:	Element(s): 3.1
Soil and Water	Soil Quality and Quantity
CSA Core Indicator(s): 3.1.1 Level of soil disturbance	
Indicator Statement	Target Statement
Use of environmentally friendly lubricants	We will research and identify environmentally friendly lubricants bi-annually
Value(s): Soil Productivity	
SFM Objective: We will protect soil resources to sustain productive forests.	

STATUS AND COMMENTS:

This indicator has been looked at and continues to be a topic of discussion amongst the harvesting staff in each reporting period. In the past it has been explained as a non-viable option for our harvesting contractors. Many of the environmentally friendly lubricants are not made to withstand the harsh environmental conditions of northern BC. As well they can void warranties and are less effective than the alternative industrial lubricants. Harvesting operations continue to be carried out on low risk areas away from running water where the main environmental impact could take place in a spill scenario. The high expense along with the above mentioned characteristics make environmentally friendly lubricants non-feasible at this time. Canfor will continue to watch the market for new, innovative products that could be an option for our loggers in the future. This indicator will be reported on again in the 2020-2021 annual report.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.26 SITE INDEX

Criterion 3:	Element(s): 3.1
Soil and Water	Soil Quality and Quantity
CSA Core Indicator(s): 3.1.1 Level of soil disturbance	
Indicator Statement	Target Statement
Area weighted average Site Index by ecological site series by leading species	The area weighted average Site Index by leading species by site series at free growing will not be less than the SIBEC predicted site index
Value(s): Soil Productivity	
SFM Objective: We will protect soil resources to sustain productive forests.	

STATUS AND COMMENTS:

The following Table 15 shows the current status for stands declared free growing on TFL 48 and site productivity assessed using the growth intercept methodology.

Since 2013 year one unit, SBSwk2 pine site series 5, has not been meeting the target performance. This unit was to be monitored to ensure it would reach its target SI over the next five years. Between the 2013 and 2015-2016 years, the predicted SI has come up which shows that the target performance is moving in the right direction. This Si is expected to reach the predicted SI. In the 2015-2016 reporting period, two other BEC/site series showed a decrease in the predicted SI putting them below the negative 10% variance. The BWBSwk1 white spruce site series 5, and the SBSwk2 pine site series 1 and 6 show a decrease in the predicted SI putting them below the negative 10% variance that is considered acceptable for this indicator. Site index is a relative measure of forest site quality and is influenced by soil moisture and rainfall. As this indicator is also linked to indicators 2.23 Soil Degradation and 2.24 Soil Disturbance Surveys which were both within compliance, it is possible that the drier summers we have had in the past few years, have influenced the SI for these BEC zones/site series. These units will continue to be monitored as well as the SBSwk2 site series 1, to determine if a trend exists.

Table 15: Site Index by Leading Species for Free Growing Stands

		Species								
		Subalpine Fir			White Spruce			Lodgepole Pine		
BEC	Site Series	Ha	SI	Predicted SI	Ha	SI	Predicted SI	Ha	SI	Predicted SI
BWBSmw1	1	-	-	N/A	504.1	20.4	17.7	247.3	17.7	18
	2	-	-	N/A	50.5	19.3	9	18.1	16.4	12
	3	-	-	N/A	224.8	19.5	17	74.9	17.9	18
	4	-	-	N/A	212.0	18.2	12	80.6	17.7	15
	5	-	-	N/A	95.5	19.0	18	140.4	20.3	18
	6	-	-	N/A	19.0	19.6	18.1	3.4	17.7	18
	7	-	-	N/A	58.4	19.9	18	1.0	18.0	18
BWBSmw1 Total		-	-	N/A	1,164.5	19.6	16.6	565.6	18.3	17.6
BWBSwk1	1	-	-	N/A	140.0	18.1	12	81.1	16.6	15



	2	-	-	N/A	11.6	17.9	9	51.8	18.9	12
	3	-	-	N/A	71.5	13.6	9	84.6	15.5	12
	4	-	-	N/A	5.6	21.5	12	18.6	14.1	15
	5	-	-	N/A	5.7	12.3	15	0.4	17.3	15
	6	-	-	N/A	0.0	0.0	15	2.4	16.0	15
BWBSwk1 Total		-	-	N/A	234.4	16.6	11.5	239.3	16.5	14.6
BWBSwk2	1	-	-	N/A	15.7	17.7	12	9.4	15.6	15
	2	-	-	N/A	0.0	0.0	9	0.0	0.0	12
	3	-	-	N/A	0.0	0.0	12	5.7	16.6	15
	4	-	-	N/A	0.0	0.0	9	0.0	15.0	12
	5	-	-	N/A	0.0	0.0	15	0.0	0.0	15
BWBSwk2 Total		-	-	N/A	15.7	17.7	11.9	15.1	16.0	15
ESSFmv2	1	1,490.8	15.1	12	650.1	16.6	15	365.1	17.0	15
	2	191.2	13.3	9	132.3	15.6	9	20.3	17.9	12
	3	226.1	14.1	6	33.9	15.5	6	51.9	14.6	9
	4	852.7	15.4	15	255.1	15.6	15	202.0	16.3	18
	5	156.6	17.6	15	25.2	15.0	15	1.0	15.2	15
	6	29.7	16.8	15	0.0	18.6	15	3.3	19.8	15
ESSFmv2 Total		2947.0	15	12.8	1096.6	16.2	14.6	643.7	16.6	15.1
ESSFmv4	1	1.6	12.3	12	0.7	12.0	15	0.0	0.0	15
	2	1.2	12.3	9	1.1	12.0	9	0.0	0.0	12
	3	0.0	0.0	6	0.0	0.0	6	0.0	0.0	9
	4	10.8	12.3	15	0.0	0.0	15	0.0	0.0	18
ESSFmv4 Total		13.5	12	10.5	1.8	12.0	15	0.0	0.0	13.5
ESSFw3	1	117.4	17.6	15	6.3	22.8	15	-	-	N/A
	2	24.7	17.6	9	0.0	0.0	9	-	-	N/A
	3	82.2	19.0	15	2.5	23.0	15	-	-	N/A
ESSFw3 Total		224.3	18.1	15	8.8	22.9	13	-	-	N/A
ESSFwk2	1	489.9	17.7	15	263.3	18.9	15	47.4	17.5	N/A
	2	294.8	16.5	9	83.1	16.9	9	89.9	17.6	N/A
	3	349.3	17.2	12	41.6	17.9	12	124.9	17.0	15
	4	495.0	17.9	15	143.6	15.6	15	27.5	16.2	N/A
	5	311.6	15.3	15	40.8	18.3	15	26.6	16.7	N/A
	6	28.1	18.5	12	1.3	17.7	12	1.7	17.5	N/A
ESSFwk2 Total		1968.7	17.1	12.4	573.7	17.7	14.1	318.1	17.2	15
SBSwk2	1	833.6	16.2	15	732.9	19.0	21.8	844.4	17.8	21
	2	85.0	17.7	12	156.0	20.4	15	201.5	19.2	15
	3	231.0	15.8	12	703.3	19.2	18	1086.2	19.2	18
	4	322.4	14.7	N/A	569.1	18.4	15	436.9	18.3	18
	5	430.6	16.7	18	505.7	19.5	21	315.6	18.0	21
	6	44.6	18.7	18	173.3	19.8	24	25.1	19.7	21
	7	29.0	15.7	N/A	44.2	16.1	N/A	55.6	20.2	N/A
SBSwk2 Total		1976.2	16.1	14.6	2884.4	19.1	19.7	2965.2	18.5	19.8
Grand Total		7205.2	16.1	12.8	5979.8	18.4	16.9	4747.1	18.1	17.4

REVISIONS:

No revisions are suggested for this indicator or objective.

2.27 COARSE WOODY DEBRIS

Criterion 3:	Element(s): 3.1
Soil and Water	Soil Quality and Quantity
CSA Core Indicator(s): 3.1.2 Level of downed woody debris	
Indicator Statement	Target Statement
Average Coarse Woody debris size and m ³ /ha on blocks harvested on the TFL since Jan 1, 2004	Average retention level over the TFL since Jan 1, 2004 will be at least 92 m ³ /ha of which a minimum of 46 m ³ /ha will be greater than 17.5cm in diameter
Value(s): Ecosystem Productivity	
SFM Objective: We will protect soil resources to sustain productive forests.	

STATUS AND COMMENTS:

In the April 1, 2016 to March 31, 2017 reporting year, 4 plots were established on TFL 48. An average of 181 m³/ha is greater than 17.5 cm diameter. Since 2004, the average CWD retention is now 85 m³/ha, up from the previous annual report period average of 78 m³/ha. A review of the site plans in the 2016 – 2017 reporting year show that CWD is being retained on harvested blocks and in the 2016 – 2017 reporting year, and they continue to be reviewed to ensure CWD management strategies are meeting the target in this indicator.

Though all the Site Plans prescribe the appropriate coarse woody debris management, the indicator itself takes into account the actual data collected from established plots in the coarse woody debris sample plots. In 2013 there were no sampling plots that fell into the grid and so no data was available for that year. The sample in the 2015 – 2016 reporting period only measured 2 plots which both showed an average of 48 m³/ha of CWD. Overall this brings the actual data for CWD below the target for this indicator (average retention level over the TFL since Jan 1, 2004 will be at least 92 m³/ha of which a minimum of 46 m³/ha will be greater than 17.5cm in diameter). However, as expected with the sample sizes increasing, the trend is showing that the CWD retention on the TFL is headed back to the target. It is expected that this indicator will be back on target for the 2017-2018 reporting year.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.28 STREAM CROSSING QUALITY INDEX

Criterion 3:	Element(s): 3.2
Soil and Water	Water Quality and Quantity
CSA Core Indicator(s): 3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance	
Indicator Statement	Target Statement
Maximum Stream Crossing Quality Index (SCQI) by watershed	The maximum SCQI score is 0.40 by watershed
Value(s): Water Quality and Quantity	



SFM Objective:
We will maintain water quality and quantity.

STATUS AND COMMENTS:

In the 2016 field season a total of 16 crossings were surveyed in the Hasler/Burnt watersheds. Sampling of the above mentioned watersheds is based on the SCQI cumulative effects hazard rating. All of the sampled watersheds achieved an SCQI score below the maximum target of 0.4. There were no crossings identified in the high class.

Canfor has addressed all of the actions identified on the roads under our responsibility. The other actions were on roads managed by other licensees. These actions were communicated to the license holders and should have been addressed. All watersheds are currently meeting the SCQI targets.

Table 16: SCQI and Water Quality Concerns for Watersheds within TFL 48 – Sampling Completed 2001 to 2014

Watershed Name	n	Erosion Indices			Water Quality Concern Ratings				
		Stream Crossing Density Index	Sum of Stream Crossing Quality Scores	Stream Crossing Quality Index	Stream Width Class ¹	% None (#streams/#streams sampled)	% Low (#streams/#streams sampled)	% Medium (#streams/#streams sampled)	% High (#streams/#streams sampled)
Gaylard (2016) ³	54	0.34	3.66	0.02	1	0	0	0	0
					2	66.7	33.3	0	0
					3	80	20	0	0
					4	8.3	83.3	8.3	0
					5	0	94.1	5.9	0
Lower Peace Reach (2009)	54	0.38	2.38	0.02	1	0	0	0	0
					2	0	0	0	0
					3	57.1	42.9	0	0
					4	6.1	93.9	0	0
					5	0	100	0	0
Gething (2015)	52	0.28	4.29	0.02	1	0	0	0	0
					2	50	50	0	0
					3	80	10	10	0
					4	0	95.5	4.5	0
					5	0	100	0	0
Upper Wolverine (2013)	69	0.28	16.2	0.09	1	0	0	0	0
					2	25	75	0	0
					3	60	0	0	40
					4	46.7	33.3	13.3	6.7
					5	18.5	44.5	33.3	3.7
Middle Wolverine (2013)	18	0.13	3.96	0.02	1	0	0	0	0
					2	66.7	0	0	33.3
					3	72.7	9.1	0	18.2
					4	50	50	0	0
					5	75	25	0	0
Hasler Creek (2014)	120	0.63	87.72	0.46	1	0	0	0	0
					2	20	80	0	0
					3	30.8	53.9	0	15.4
					4	7	67.5	20.9	4.7



					5	16.9	50.9	20.3	11.9
Brazion Creek (2002)	105	0.32	34.48	0.11	1	0	0	0	0
					2	20	40	0	40
					3	5.6	44.4	22.2	27.8
					4	27.2	47.3	16.4	9.1
					5	22.2	55.6	14.8	7.4
Highhat Creek (2014)	70	0.45	17.87	0.11	1	0	100	0	0
					2	50	50	0	0
					3	9.1	90.9	0	0
					4	40	60	0	0
					5	51.7	48.3	0	0
Lower Carbon (2010)	37	0.28	3.73	0.03	1	0	100	0	0
					2	100	0	0	0
					3	33.3	55.5	11.1	0
					4	42.9	42.9	14.3	0
					5	57.9	31.6	10.5	0
Seven Mile (2010)	17	0.22	2.96	0.04	1	0	0	0	0
					2	100	0	0	0
					3	0	100	0	0
					4	14.3	71.4	0	14.3
					5	60	20	20	0
Eleven Mile (2010)	22	0.1	0.56	0	1	0	100	0	0
					2	75	25	0	0
					3	100	0	0	0
					4	50	50	0	0
					5	60	40	0	0
Upper Carbon (2015)	55	0.12	1.9	0.01	1	75	25	0	0
					2	57.1	42.9	0	0
					3	33.3	66.6	0	0
					4	20	80	0	0
					5	60.9	39.1	0	0
Lower Sukunka (2006)	191	0.36	70.63	0.13	1	0	0	0	0
					2	0	66.7	0	33.3
					3	10	30	15	45
					4	20.2	41.5	10.6	27.7
					5	28.8	37	23.3	10.9
Upper Sukunka (2013)	89	N/A ²	N/A ²	N/A ²	1	100	0	0	0
					2	0	100	0	0
					3	30	20	20	30
					4	18.8	43.7	18.8	18.7
					5	31	34.5	31	3.4
Lower Pine Residual (2014)	78	0.44	1.62	0.01	1	0	0	0	0
					2	0	0	0	0
					3	0	0	0	0
					4	20	40	33.3	6.7
					5	9.5	54	11.1	25.4
Burnt Creek (2016)	205	0.33	72.66	0.12	1	100	0	0	0
					2	25	37.5	25	12.5
					3	37.9	27.6	20.7	13.8
					4	37.3	22.9	19.3	20.4
					5	29.3	26.8	20.7	33.2
Lower Murray	55	0.32	17.79	0.1	1	100	0	0	0
					2	50	50	0	0



(2009)					3	31.3	37.5	25	6.3
					4	10.7	71.4	3.6	14.3
					5	16.7	66.7	16.7	0
Upper Murray (2007)	154	0.86	32.18	0.18	1	100	0	0	0
					2	100	0	0	0
					3	54.5	27.3	13.6	4.5
					4	16.9	61	5.1	16.9
					5	52.4	11.1	25.4	11.1
Lower Wolverine	63	0.27	19.3	0.08	1	100	0	0	0
					2	75	25	0	0
					3	36.4	63.6	0	0
					4	31	40.5	4.8	23.8
					5	40	40	0	20
Upper Pine Residual (2008)	133	0.33	36.75	0.09	1	100	0	0	0
					2	55.6	33.3	11.1	0
					3	14.8	59.3	18.5	7.4
					4	29.5	51.1	10.2	9.1
					5	37.5	25	37.5	0
Johnson (2015)	49	0.2 3	5.23	0.02	1	0	0	0	0
					2	75	25	0	0
					3	38.5	61.5	0	0
					4	54.2	37.5	4.2	4.2
					5	25	75	0	0

1 = greater than 20m, 2 = 5 to 20m, 3 = 1.5 to 5m, 4 = 0.5 to 1.5m, 5 = less than 0.5m

2 = SCQI scores of 0

3 = Year the watershed was surveyed

REVISIONS:

No revisions are suggested for this indicator or objective.

2.29 ACTION PLANS FOR HIGH WATER QUALITY CONCERN RATING (WQCR)

Criterion 3:	Element(s): 3.2
Soil and Water	Water Quality and Quantity
CSA Core Indicator(s): 3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance	
Indicator Statement	Target Statement
Number of crossings with a High Water Quality Concern (WQCR) with actions plans prepared within one year of discovery	100% of High WQCR crossings will have action plans prepared within one year of discovery
Value(s): Water Quality and Quantity	
SFM Objective: We will maintain water quality and quantity.	

STATUS AND COMMENTS:

In 2016 – 2017 reporting year there were no crossings requiring action plans due to broken/plugged culverts. As the majority of these roads are still actively used they are being regularly maintained throughout the year. All of the action plans that were under Canfor responsibility are scheduled for actions to fix/replace culverts. There were no crossings

requiring action plans that were under the responsibility of other licensees in the 2016 – 2017 year.

REVISIONS:

No revisions are suggested for this indicator or objective

2.30 PEAK FLOW INDEX

Criterion 3:	Element(s): 3.2
Soil and Water	Water Quality and Quantity
CSA Core Indicator(s): 3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance	
Indicator Statement	Target Statement
The percentage of watersheds within TFL 48 achieving baseline thresholds for Peak Flow Index	A minimum of 95% of the watersheds within TFL 48 will be below the baseline threshold
Value(s): Water Quality and Quantity	
SFM Objective: We will maintain water quality and quantity.	

STATUS AND COMMENTS:

A new projection of Peak Flow Index (PFI) has been completed for the 2016 – 2017 reporting period. Currently all watersheds are well below the max PFI targets. Blocks that have not yet been developed are typically larger in size at the planning stage than they are post block layout. This is to ensure field crews capture as much pine infested with Mountain Pine Beetle. Block development within the watersheds are closely monitored such that the established target is not exceeded. The information presented in this annual report forecasts disturbances and growth to the end of 2016.

Table 17: Peak Flow Index Post Development Status

2015-2016 Data							
Watershed	H60 ELEV	Watershed (ha)	Current Development		Future Development		Max PFI Target
			ECA (ha)	PFI (%)	ECA (ha)	PFI (%)	
Adams Creek	1,107	5,462	12	0.2	1,032.6	18.9	43
Aylard Creek	1,036	5,460	27	0.5	313.1	5.7	37
Basin "862"	853	2,825	1,075	38.1	861.3	30.5	43
Beany Creek	958	3,902	18	0.5	221.1	5.7	37
Brazion Creek	1,220	32,398	1,977	6.1	3,947.3	12.2	37
Burnt Creek	1,185	62,216	2,757	4.4	0.0	0.0	37
Cameron Creek	783	3,615	199	5.5	81.9	2.3	50
Dunlevy Creek	1,047	17,020	640	3.8	1,971.4	11.6	31
Eleven Mile	1,326	21,621	548	2.5	91.6	0.4	43
Gaylard	1,029	15,652	2,968	19.0	53.4	0.3	31
Gething	996	18,521	1,380	7.5	87.6	0.5	31
Gw illim	1,066	4,520	810	17.9	289.1	6.4	43
Hasler Creek	1,077	19,027	4,817	25.3	14.9	0.1	37
Hihat Creek	1,037	15,659	3,923	25.1	5,687.1	36.3	43
Johnson	891	21,169	3,522	16.6	797.6	3.8	37
Lebleu Creek	874	2,000	12	0.6	6.4	0.3	50
LeMoray Creek	1,291	11,199	381	3.4	560.0	5.0	37
Low er Carbon	1,057	13,178	982	7.5	285.5	2.2	50
Low er Murray	1,066	17,408	1,703	9.8	1.2	0.0	37
Low er Peace Reach	955	14,361	2,340	16.3	99.1	0.7	50
Low er Pine Residual	923	16,239	4,518	27.8	3.1	0.0	43
Low er Sukunka	904	54,308	7,880	14.5	997.7	1.8	43
Low er Wolverine	1,161	23,283	2,122	9.1	0.7	0.0	37
Medicine Woman Creek	975	1,877	49	2.6	13.2	0.7	35
Middle Wolverine	1,205	17,674	3,456	19.6	6.7	0.0	43
North Peace Residual	929	9,469	233	2.5	472.9	5.0	50
Ruddy Creek	922	6,450	128	2.0	24.9	0.4	31
Seven Mile	1,257	7,885	256	3.2	47.6	0.6	43
Trapper Creek	1,179	7,575	2	0.0	0.0	0.0	37
Upper Carbon	1,291	46,295	896	1.9	1,511.9	3.3	37
Upper Murray	1,294	17,868	2,272	12.7	3,073.1	17.2	37
Upper Pine Residual	1,082	40,159	5,643	14.1	8,263.4	20.6	37
Upper Sukunka	1,075	23,459	1,964	8.4	4,364.0	18.6	43
Upper Wolverine	1,378	18,042	1,011	5.6	1,435.5	8.0	37

REVISIONS:

No revisions are suggested for this indicator or objective.

2.31 WATERSHED REVIEWS

Criterion 3:	Element(s): 3.2
Soil and Water	Water Quality and Quantity
CSA Core Indicator(s): 3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance	
Indicator Statement	Target Statement
The percentage of watersheds reviews completed where the baseline threshold is exceeded	100% of watersheds that exceed the baseline threshold will have a watershed review completed when new harvesting is planned
Value(s): Water Quality and Quantity	
SFM Objective: We will maintain water quality and quantity.	

STATUS AND COMMENTS:

In 2016-2017 reporting year there were no watershed reviews required as there were no watersheds where the PFI was exceeded and harvesting was proposed. Watersheds will continue to be monitored and going forward if harvesting is proposed in the watersheds that are approaching the PFI target, a watershed review will be required. Each year this will be reassessed based upon growth and new areas proposed to be harvested. If it is forecasted that the PFI may be exceeded, block development (layout) will be monitored to ensure that the ECA (equivalent clear cut area) does not elevate the PFI (peak flow index) to above the target as shown in Indicator 30.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.32 SPILLS ENTERING WATERBODIES

Criterion 3:	Element(s): 3.2
Soil and Water	Water Quality and Quantity
CSA Core Indicator(s): 3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance	
Indicator Statement	Target Statement
Number of reportable spills or misapplications entering water bodies	Zero reportable spills or misapplications entering water bodies
Value(s): Water Quality and Quantity	
SFM Objective: We will maintain water quality and quantity	

STATUS AND COMMENTS:

There were no spills or misapplications of petroleum products into a riparian feature between April 1, 2016 and March 31, 2017 on the DFA. When the efficacy flights were conducted for the 2016 aerial herbicide program there were no incidences of overspray occurring into a waterbody.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.33 CARBON SEQUESTRATION

Criterion 4:	Element(s): 4.1
Role in Global Ecological Cycles	Carbon Uptake and Storage
CSA Core Indicator(s): 4.1.1 Net carbon uptake	
Indicator Statement	Target Statement
DFA Average Carbon (C) sequestration rate (Mg C/year)	Maintain DFA average carbon sequestration rates that are no more than 15% less than those achieved using the minimum natural range of variation
Value(s): Carbon Uptake and Storage	
SFM Objective: We will maintain the processes for carbon uptake and storage within the natural range of variation.	

STATUS AND COMMENTS:

There has been no change in the status of this indicator since reported in SFMP 4. The data analysis for this indicator occurs when the Timber Supply Analysis/Review is conducted in support of determining the next AAC Determination for the DFA. Government regulation changes have extended the period between AAC determinations which has lengthened the reporting period for this particular indicator. The next anticipated determination was delivered in October of 2015 and so this indicator was updated for this annual reporting period. The next time this indicator will be updated will be when the next TSR is completed, before the expiry of the current AAC uplift in October of 2020.

Following are two graphs, which provides an example of the average C sequestration rate for both an individual stand (Forecast AU 3 – Natural and Forecast AU 34 – Managed) and shows the average C sequestration rate over the whole DFA over time.



Figure 10: An Example of Average C Sequestration Rates for a Natural Spruce Leading BWBS Mesic Site Stand (Forecast AU 5) and an Associated Managed Stand (Forecast AU m³)

At the stand level there is a greater release of C to the atmosphere following the decomposition of the larger pool of dead organic matter (snags and CWD) in the natural stand which results in a lower sequestration rate during the first several decades of stand development (Figure 10). In the example provided, the average sequestration rate takes longer to return to positive values in the natural stand versus the managed stand. This is partly related to the fact that the harvested wood removed from the site during harvesting does not contribute to ecosystem C release to the atmosphere. Rather, it is assumed to be stored in wood products.

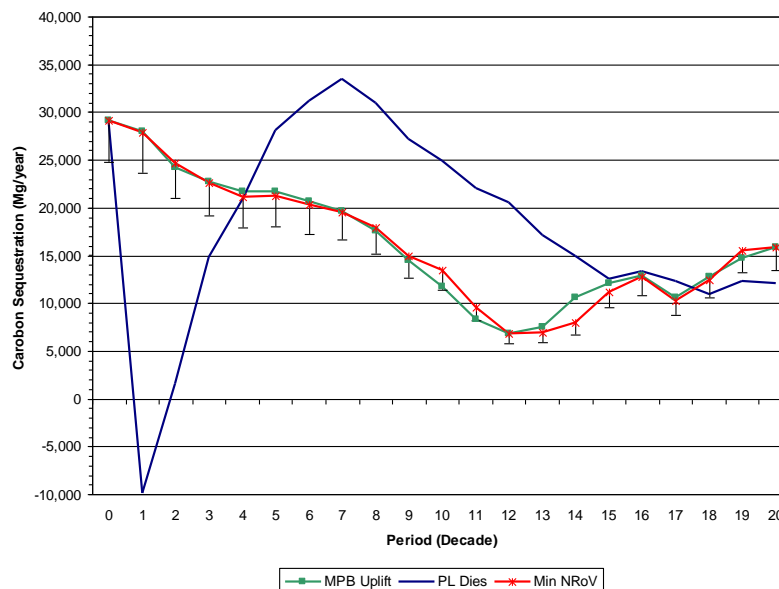


Figure 11: Carbon Sequestration (Mg C/year) within TFL 48 Over Time

At the DFA level the average sequestration rate declines from the present level of about 29,000 Mg C/yr over the next 120 years and stabilizes between 10,000 and 15,000 Mg C/yr in the long term. The decline from the current situation is due to the large amount of area (approximately 62%) that is between 40 and 140 years old and only 29% greater than 140 years old versus in 100 years the projection is that there will be only 31% of the land base between 40 and 140 years old and 58% greater than 140 years old. Over time the age class distribution is more evenly distributed with more area in younger stands and older stands with lower sequestration rates therefore the DFA level sequestration rate declines. For comparison purposes an estimate of the rate of C sequestration is provided for both the proposed AAC the sequestration rates using the minimum natural range of variation and the scenario where all pine is assumed to be killed in a mountain pine beetle outbreak.

There is no significant difference between the proposed harvest level and the minimum natural range of variation except for periods 10 and 11 in the simulation. After this point in time the sequestration rate is above or equivalent for the proposed harvest level.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.34 ECOSYSTEM CARBON STORAGE (MG) IN THE DFA

Criterion 4:	Element(s): 4.1
Role in Global Ecological Cycles	Carbon Uptake and Storage
CSA Core Indicator(s): 4.1.1 Net carbon uptake	
Indicator Statement	Target Statement
Ecosystem Carbon (C) Storage (Mg) in the DFA	Minimum of 95% of minimum natural range of variation disturbance levels of Ecosystem Carbon Storage
Value(s): Carbon Uptake and Storage	
SFM Objective: We will maintain the processes for carbon uptake and storage within the natural range of variation.	

STATUS AND COMMENTS:

There has been no change in the status of this indicator since reported in SFMP 4. The data analysis for this indicator occurs when the Timber Supply Analysis/Review is conducted in support of determining the next AAC Determination for the DFA. Government regulation changes have extended the period between AAC determinations which has lengthened the reporting period for this particular indicator. The next anticipated determination was delivered in October of 2015 and so this indicator was updated for this annual reporting period. The next time this indicator will be updated will be when the next TSR is completed, before the expiry of the current AAC uplift in October of 2020.

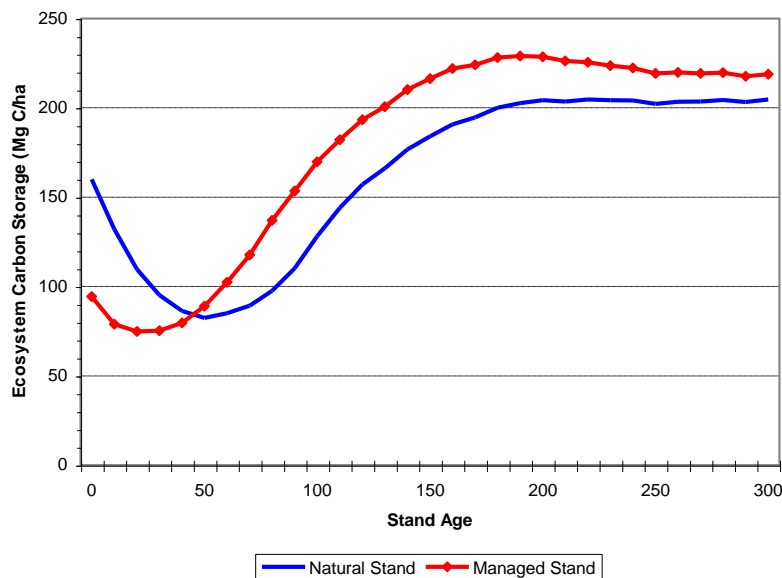


Figure 12: An Example of C Storage for a Natural Spruce Leading BWBS Mesic Site Stand (Forecast AU 5) and an Associated Managed Stand (Forecast AU m³)

For comparison a stand level graph (Figure 12) is provided which demonstrates a natural stand and its associated managed stand C storage levels over time. Note that while the natural stand started with more C remaining on the site after the disturbance the managed stand catches up in about 40 years.

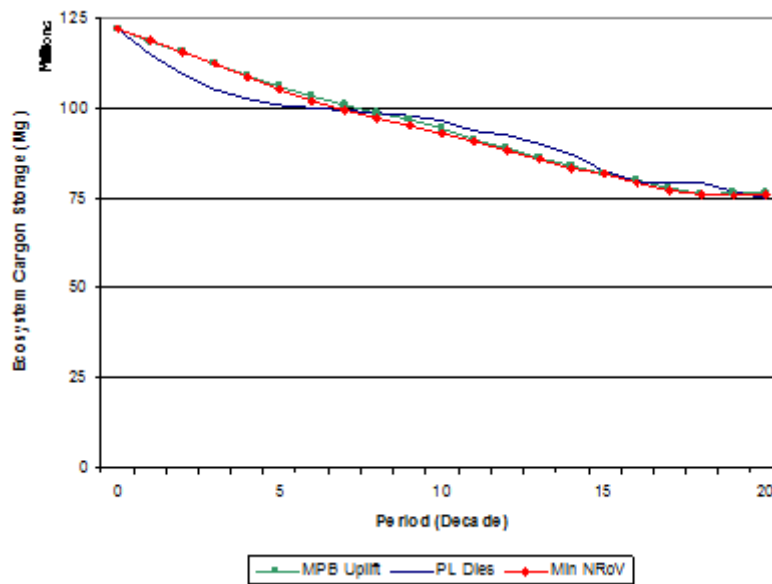


Figure 13: Total Ecosystem Carbon (Mg) Storage in the DFA Over Time

There is an estimated 122 million Mg of C currently stored in the TFL 48 ecosystem declining in the long term to approximately 76 million Mg of C (Figure 13). Both the C storage levels based on the proposed AAC and the minimum and maximum range of variation decline over the next 180 years and then stabilize for the remainder of the simulation. There is no significant difference between the different alternate strategies and the proposed strategy in ecosystem carbon storage over time.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.35 RANGE OPPORTUNITIES

Criterion 5:	Element(s): 5.1, 6.3
Economic and Social Benefits	Timber and Non-Timber Benefits; Forest Community Well-Being and Resilience
<p>CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA</p> <p>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</p>	
Indicator Statement	Target Statement
Annual minimum number of Animal Unit Months opportunity	We will report out annually the number of Animal Unit Months that are authorized on the TFL.
Value(s): Timber and Non-Timber Multi-use Benefits, Strengthening and Diversifying Community Businesses and Business Opportunities	
<p>SFM Objective:</p> <p>We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.</p> <p>We will provide opportunities for local economic development.</p>	

STATUS AND COMMENTS:

In 2016, there was a total of 1083, AUM's available on range tenures on TFL 48. This is a slight decrease in AUM's from the 2014-2015 reporting period.

Table 18: AUM's on TFL48 in 2016

Range Tenure	Total AUM's	TFL Proportion (%)	TFL AUM's
RAN073263	103	1.2	1
RAN073616	366	26.5	97
RAN073876	770	34.9	269
RAN074239	50	100	50
RAN074307	356	39.8	142
RAN075680	111	87.9	98
RAN076149	157	2.8	4
RAN076505	118	9.9	12
RAN076672	700	58.7	411
Total			1083

REVISIONS:

No revisions are suggested for this indicator or objective.

2.36 HARVEST METHOD

Criterion 5:	Element(s): 5.1
Economic and Social Benefits	Timber and Non-Timber Benefits
CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	
Indicator Statement	Target Statement
Proportion (%) of coniferous harvesting volume completed with conventional ground based methods by 5 year cut control period by each participant.	A maximum of 93% of the coniferous harvesting volume (m3) will be completed with conventional ground based methods by 5 year cut control period by each participant.
Value(s): Timber and Non-Timber Multi-Use Benefits	
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.	

STATUS AND COMMENTS:

The following Figure 14 shows the history of the harvesting program over the cut control period 2012 – 2016. In early 2016 a change was made to the amount of cable and conventional harvesting on the TFL, to a maximum of 93% conventional harvest on the TFL.

Between 2012 and 2016, the cable harvest percentage fluctuated between 19.9% and 11.0% for Canfor operations on the TFL. In 2013 BCTS had one sale that had some cable volume but

overall, BCTS has not sold cable volume though similar profile and piece size is allocated to BCTS on the TFL. Going forward BCTS's allocated cable volume on the TFL is expected to help continue to meet the cable/conventional harvest method percentage on the TFL.

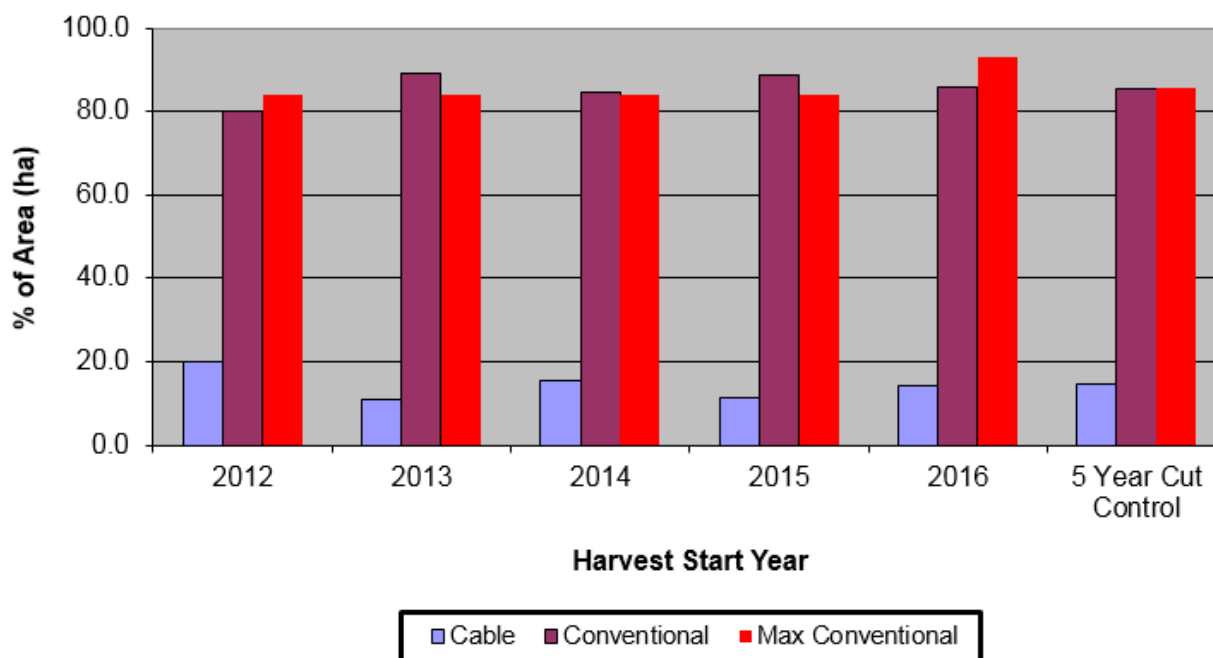
Lumber market conditions have a direct effect on the pricing of forested stands. With poor market pricing the harvesting of stands using the cable system results in added costs that would not get recognized in the value of the stand. The added cost of utilizing cable harvesting is completely absorbed by the Licensees which have made many of these stands un-economical to harvest. As market conditions improve, and forest licensees in the interior of the province begin to harvest stands not infested by the Mountain Pine Beetle, the value of forest stands will increase which will make stands in the Chetwynd area more attractive to harvest using cable or other steep slope systems.

In the 2015 – 2016 reporting year, Canfor saw the introduction of a steep slope harvester put into use on the TFL which will help towards achieving the conventional/cable target to increase the proportion of steep slope harvest on the TFL. Canfor and other local licensees continue to be faced with a lack of contractors that have the ability to operate cable or steep slope logging programs. This has been identified as a problem that will continue to challenge us in the near future. It is hoped that with the advances in harvesting systems and machinery being utilized that increasing options for equipment to be used in steeper ground will provide new and innovative ways to log on this steeper ground within the TFL, in order to increase the proportion of steep slope harvest.

By the end of 2016 at the end of the cut control period, 14.6% of the area overall, was harvested using a cable system with 85.4% harvested conventionally. In this 5 year cut control period, Canfor has met the target of harvesting a maximum of 93% using conventional ground based methods for this 5 year cut control period, while BCTS did not.

For the next 5 year cut control period, in order to achieve this target Canfor is developing a strategy to target harvesting approximately 100,000m³ of volume by cable or other steep slope operations on an annual basis. Other Licensees that are provided the opportunity to harvest timber on the TFL (through timber sales or other agreements), are being encouraged to utilize cable systems as well. Volume allocated to the BCTS program now includes cable volume to ensure that the BCTS TFL 48 harvest program reflects the timber and operational profile of TFL 48.

Figure 14: Proportion of Conventional Harvest Systems Used 2012-2016



REVISIONS:

A revision was proposed by Canfor and BCTS to address the external audit finding in 2016 which identifies the shortfall in cable harvesting on the TFL for two consecutive years. The proposed change was brought forward to the PAC at the October 2015 meeting. It was agreed that this indicator would be revised and the Licensees would review this indicator and present a change at the next PAC meeting in early 2016. At the February 2016 meeting, Licensees proposed that a maximum of 93% of the conifer harvesting volume (m3) would be completed with conventional ground based methods by 5 year cut-control period, by each participant. This was accepted by the PAC members and would be reported in the 2015 – 2016 annual report.

2.37 PROPORTION OF HARVESTING CONSISTENT WITH VISUAL QUALITY OBJECTIVE

Criterion 5:	Element(s): 5.1
Economic and Social Benefits	Timber and Non-Timber Benefits
CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	
Indicator Statement	Target Statement
Proportion of harvesting within known visual areas that are consistent with the Visual Quality Objective (VQO)	100% of harvesting within visual areas will be consistent with the Visual Quality Objective
Value(s): Timber and Non-Timber Multi-Use Benefits	
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.	



STATUS AND COMMENTS:

Between April 1, 2016 and March 31, 2017 there were 9 blocks (8 Canfor blocks and 1 BCTS block) that were harvested within areas requiring conformance with visual quality objectives. These blocks were all consistent with the VQO objectives.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.38 BACK COUNTRY CONDITION

Criterion 5:	Element(s): 5.1
Economic and Social Benefits	Timber and Non-Timber Benefits
CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	
Indicator Statement	Target Statement
Proportion (%)of back country areas (ha) that are in a semi-primitive recreation opportunity spectrum (ROS) class	We will maintain or increase semi-primitive ROS in Klin-se-za, Boccock, Butler Ridge, Pine/Lemoray, Peace River/Boudreau and Elephant Ridge/Gwillim Protected Areas and manage Special Management Zones (Klin se za, North Burnt, Dunlevy) as per LRMP (See Table for baseline)
Value(s): Timber and Non-Timber Multi-Use Benefits	
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.	

STATUS AND COMMENTS:

There has been no change to the status of this indicator since reported in the SFMP 4 in 2005. In 2016 – 2017 reporting year there was no harvesting or road construction in or adjacent to any of the backcountry areas. The Mount McAllister wildfire which burned in the summer of 2014 and into the winter, burned very close to the Klin Se Za Park. Despite the size of this fire, there was only a slight increase in the ROS inventory within the Klin Se Za Mountain area. The VRI data was updated in the 2015 year as well as a change in the layers available from the Oil and Gas Commission which shows more access into these areas. With these updates to the data used, a slight change in the ROS inventory is noticed. These changes however are not all directly caused directly by forestry activities on the TFL. This table will be updated in the 2017-2018 annual report when we hope to have LiDAR to use to show more accurate development on the TFL.

The baseline (2001) and current (2015) recreational opportunity spectrum for the stated Backcountry areas are shown on the following tables (Table 19).

Table 19: Baseline Condition – ROS Inventory

Back Country Area	ROS Class Baseline Condition – (2001)							Grand Total
	Roaded			Roaded Total	Semi Primitive		Semi Primitive Total	
	Rural	Modified	Natural		Motorized	Non Motorized		
Bocock Peak						1,126	1,126	1,126
Butler Ridge			1,133	1,133	1,309	4,151	5,460	6,593
Dunlevy Creek			5,283	5,283	5,001	21,564	26,565	31,848
Elephant Ridge / Gwillim		12		12		2,801	2,801	2,813
North Burnt		53		53	6,076	10,683	16,759	16,813
Peace River / Boudreau	990			990		1,219	1,219	2,209
Pine - Lemoray					882	2,260	3,142	3,142
Klin Se Za			0	0		2,668	2,668	2,669
Klin Se Za Headwaters			7,140	7,140	137	10,581	10,718	17,857
Klin Se Za Mountain			1,711	1,711		4,639	4,639	6,350
Grand Total	990	65	15,266	16,321	13,404	61,694	75,098	91,419

Table 19 Current Condition – ROS Inventory Updated to June 2015

Back Country Area	ROS Class (2005)							Grand Total
	Roaded			Roaded Total	Semi Primitive		Semi Primitive Total	
	Rural	Modified	Natural		Motorized	Non Motorized		
Bocock Peak						1,126	1,126	1,126
Butler Ridge			1,133	1,133	1,309	4,151	5,460	6,593
Dunlevy Creek			5,283	5,283	5,946	20,619	26,565	31,848
Elephant Ridge / Gwillim		12		12		2,801	2,801	2,813
North Burnt		53		53	7,874	8,886	16,759	16,813
Peace River / Boudreau	990			990		1,219	1,219	2,209
Pine - Lemoray					882	2,260	3,142	3,142
Klin Se Za			0	0		2,668	2,668	2,669
Klin Se Za Headwaters			7,140	7,140	137	10,581	10,718	17,857
Klin Se Za Mountain			1,711	1,711		4,639	4,639	6,350
Grand Total	990	65	15,266	16,321	16,147	58,951	75,098	91,419

REVISIONS:

No revisions are suggested for this indicator or objective.

2.39 RECREATIONAL SITES

Criterion 5:	Element(s): 5.1
Economic and Social Benefits	Timber and Non-Timber Benefits
CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	
Indicator Statement	Target Statement
Number of recreational trails and campsites maintained by Canfor	Canfor will provide and/or maintain 1 backcountry trail and 3 campsites on TFL 48
Value(s): Timber and Non-Timber Multi-Use Benefits	
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality and non-timber commercial values.	



STATUS AND COMMENTS:

Canfor maintains the Gething Creek, Carbon Lake and Wright Lake campsites and the Battleship Mountain Trail. The Gething and Carbon are road access sites while the Wright Lake campsite is a remote wilderness site with off highway vehicle or hiking access. The Battleship Mountain trailhead is road accessible and in just a few hours you can be in the alpine. All of these recreational values provide a number of outdoor activities (hunting, fishing, hiking and canoeing). All of the above recreational sites can be accessed from the Johnson Creek FSR.

In 2016 and 2017, campsite maintenance was tendered out to a local contractor for maintenance of the three campsites and the Battleship Mountain Trail. The campsites are also checked each year by a Canfor representative throughout the course of the year to determine maintenance needs which are passed along to the local contractor as well as to the Rec Sites and Trails BC program which also monitors and maintains rec sites and trails in BC. A campsite maintenance contract was developed and awarded early in 2016 and again in early 2017 to ensure this indicator remains in compliance.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.40 CONSISTENCY WITH THIRD PARTY ACTION PLANS

Criterion 5:	Element(s): 5.1
Economic and Social Benefits	Timber and Non-Timber Benefits
CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	
Indicator Statement	Target Statement
Consistency with mutually agreed upon action plans for guides, trappers, range tenure holders, and other non-timber commercial interests	Operations 100% consistent with the resultant action plans
Value(s): Timber and Non-Timber Multi-Use Benefits	
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.	

STATUS AND COMMENTS:

In the 2016-2017 reporting period there were no action plan agreements signed with any users on the TFL. Nor were there any pre-existing action plans requiring implementation in the 2016-2017 reporting year.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.41 WASTE

Criterion 5:	Element(s): 5.1
Economic and Social Benefits	Timber and Non-Timber Benefits
CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	
Indicator Statement	Target Statement
The percentage of blocks and roads assessed in which avoidable waste and residue levels are within the target range	Annually, 100% of cutblocks and roads will fall within the target avoidable waste and residue range where scale based stumpage is applied and waste and residue benchmarks are still in place.
Value(s): Timber and Non-Timber Multi-Use Benefits	
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.	

STATUS AND COMMENTS:

Between April 1, 2016 and March 31, 2017 there were a total of 33 blocks harvested by Canfor and BCTS. Of the 30 Canfor blocks, 14 blocks fell under scale based stumpage where waste benchmarks still apply. The blocks that were surveyed were below waste benchmarks. The remaining blocks are not subject to waste assessments as they were either under cruise based stumpage or tabular rate stumpage which requires the licensee to pay for all of the volume of timber that is within the stand. From the April 1, 2016 to March 31, 2017 reporting period neither Canfor nor BCTS reported any waste issues.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.42 FOREST HEALTH

Criterion 5:	Element(s): 5.1
Economic and Social Benefits	Timber and Non-Timber Benefits
CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	
Indicator Statement	Target Statement
% of significant detected forest health damaging events which have treatment plans prepared	100% of significant detected forest health damaging events will have treatment plans prepared within 1 year of initial detection
Value(s): Timber and Non-Timber Multi-Use Benefits	
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.	

STATUS AND COMMENTS:

In the period between April 1, 2016 and March 31, 2017, there were no major detections of forest health issues relative to managed stands.

For 2015 approximately 200 ha of area is scheduled to be replanted and will require close monitoring to ensure they reach free-grow status in the allotted time period. It is likely that these

areas will require a brushing treatment before planting can occur in order to ensure the seedlings can become established in the planting year.

In the 2016-2017 reporting period, the ongoing Mountain Pine Beetle (MPB) infestation continues to be a significant forest health agent of concern on TFL 48. In 2007 when the AAC was determined by the Chief Forester, the TSR package that was submitted to government to support the determination identified 26.8 million m³ of pine volume susceptible to MPB attack. Quantifying the extent of MPB attack with much precision is very difficult. In 2010 the government designated the TFL as a “salvage” Emergency Bark Beetle Management Area. Since that time there has been little to no monitoring of the rate of spread or level of attack of MPB on the TFL. However the forest health overview assessments completed by the MFLNRO have indicated that the rate of spread has decreased as the main wave of attack has moved north out of the TFL.

The 2014 projection is based on a variety of assumptions that takes into account both age class and pine stand density. This area totals approximately 67,636 ha. The corresponding volume is determined by multiplying the default volume per ha of 275. The area assumption is based on aerial flights and field observations completed by MFLNRO and Canfor staff on the spread and extent of the MPB.

Of the 73.1 million m³ of conifer volume on the TFL, 27.3 million m³ (37%) is pine and of this, approximately 18.6 million m³ (25% of the total conifer and 68% of pine volume) is attacked by MPB.

Over the course of the 2016 year we also began monitoring spruce bark beetle populations as a result of the spruce bark beetle outbreak in the adjacent Mackenzie and Prince George forest districts. While not yet significant, there are some signs of suspected spruce beetle infestations (<50 ha) noted in the western and southern portions of TFL 48 by MFLNRO forest health overview assessment flights. It was noted that there are some spruce trees showing signs of stress and in some areas single trees with significant pitch tubes. Preliminary checks have now been completed and it was noted that there are areas where spruce beetle is beginning to show signs of heavier than usual infestations in the spruce trees. Spruce beetle continues to be a concern on the TFL and monitoring will continue in those spruce leading stands to ensure the beetle populations are being kept in check. To date, spruce beetle populations seem to remain at endemic levels in most areas. In areas where there are higher spruce bark beetle populations noted in areas of high susceptibility, a trap tree program may be implemented with a more direct focus on sanitation harvesting in the heavier hit stands in an attempt to control a possible outbreak.

Table 20: Summary of Forest Health Issues 2000-2017

Factor	2017 Volume (m ³)	2017 Area (ha)	2000-2017 Volume (m ³)	2000-2017 Area (ha)	2017 Comments
Blow Down	0	0	10,665	38.8	Derived area from volume /275.
Mountain Pine Beetle	1,844,275	8743	18,599,900	67,636	Derived volume based on .35 m ³ per tree. Derived area from volume /275.
Spruce Bark Beetle	0	0	1,800	6.5	Derived area from volume /275.
Fire	18,300	151	21,425	247.6	No salvage operations initiated. Volume estimated at 100% mortality and 300m ³ /ha
Balsam Bark Beetle	0	0	0	0	Very light incidence in mountain areas.
Spruce Budworm	0	0	0	0	Possible incidence in 2000 – may have been misclassified.
Forest Tent Caterpillar	0	0	0	0	Scattered levels in 2000.
Environmental	0	0	0	0	Incidental and scattered snow damage – not quantifiable.
Total	1,862,575	6,857	9,329,715	34,095.9	

REVISIONS:

No revisions are suggested for this indicator or objective.

2.43 PROPORTION OF COMPLETED FOREST HEALTH ACTION PLANS

Criterion 5:	Element(s): 5.1
Economic and Social Benefits	Timber and Non-Timber Benefits
CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	
Indicator Statement	Target Statement
Proportion of required actions completed as per forest health treatment plans	100% of required actions will be completed as per forest health treatment plans
Value(s): Timber and Non-Timber Multi-Use Benefits	
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.	

STATUS AND COMMENTS:

In June of 2010 the Ministry of Forests and Range released a memorandum regarding the Re-designation of Emergency Management Units. These units depict the location of various levels of Mountain Pine Beetle attack and associated with those levels of attack are one of three management strategies: aggressive; containment, and; salvage. The TFL was identified as an area that has sustained a high level of impact from the Mountain Pine beetle and was therefore identified as an area where the recommended management strategy is to harvest/salvage as much affected pine as possible. In 2007 when the Deputy Chief Forester determined the Annual Allowable Cut (AAC) for the TFL his direction/expectation for Canfor as the licensee was to direct harvesting towards pine leading stands with a target of exceeding 70% pine volume delivered.

In the 2016-2017 reporting year there was a slight change in the directive regarding forest health and it is in regard to the harvest of MPB stands. With the recent outbreak of the spruce

bark beetle in the adjacent Mackenzie and Prince George forest districts coming as close as the Pine Pass, Licencees in the Peace region are now being warned of the potential impacts of a possible spruce bark beetle outbreak in our operating areas.

While the focus for harvesting on the TFL remains on salvaging MPB impacted stands, a request from FLNRO to look for and report spruce beetle populations in proposed blocks and cutting permit applications was also made. To date, spruce beetle populations seem to remain at endemic levels though the TFL is being closely monitored.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.44 COMMUNITY DONATIONS

Criterion 5:	Element(s): 5.2
Economic and Social Benefits	Communities and Sustainability
CSA Core Indicator(s): 5.2.1 Level of investment in initiatives that contribute to community sustainability	
Indicator Statement	Target Statement
Canfor community donations per year	A minimum of \$7,000/year will be made available for community donations
Value(s): Local Employment	
SFM Objective: We will ensure local communities and contractors have the opportunity to share in benefits such as jobs, contracts and sales.	

STATUS AND COMMENTS:

In the 2016-2017 reporting period a total of \$5,852 was donated to various interest groups in both monetary donations as well as products for various fundraisers and door prizes. Donations were made to Sauteau First Nation for building logs for their new camp as well as firewood for the community. A monetary donation was made to the Chetwynd Christmas Bureau Society and SWAG was donated to the Leishman Ball Tournament as part of a fundraiser for a family member who passed leaving behind his young family.

At the corporate level, Chetwynd continues to receive funding for their dry grad program, scholarship funds and other amateur sports programs. In the 2016-2017 year Chetwynd also saw the continued sponsorship of the free Pancake Breakfast held on the Saturday of the Chainsaw Carving Competition which is held annually and Canfor again sponsored a carver for this annual event.

REVISIONS:

No revisions are suggested for this indicator or objective.

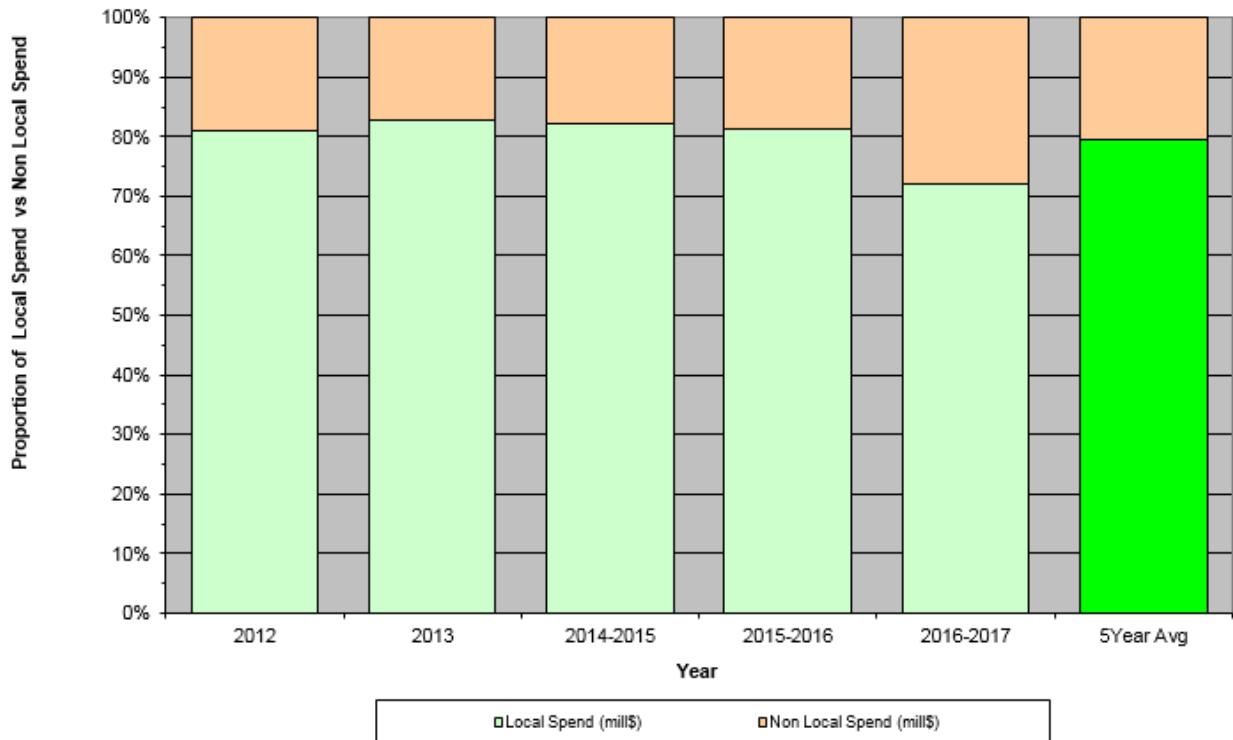
2.45 LOCAL EMPLOYMENT

Criterion 5:	Element(s): 5.2
Economic and Social Benefits	Communities and Sustainability
CSA Core Indicator(s): 5.2.1 Level of investment in initiatives that contribute to community sustainability	
Indicator Statement	Target Statement
The proportion of dollars spent on local versus non-local contractors	A 5 year rolling average of 65% of local vs. non-local contractors and an annual minimum of 50% local versus non-local
Value(s): Local Employment	
SFM Objective: We will ensure local communities and contractors have the opportunity to share in benefits such as jobs, contracts and sales.	

STATUS AND COMMENTS:

Between April 1, 2016 and March 31, 2017 not including stumpage, Canfor paid \$52.2MM to all vendors. Local vendors or contractors were paid \$33.9MM or 72% of total expenditures. The five-year rolling average from 2012 through to the end of March 31, 2017 saw 79% of expenditures made to local vendors or contractors. This remains above the target of 65% for this indicator.

Figure 15: Proportion of Dollars Spent on Local vs Non-Local Contractors



REVISIONS:

No further revisions are suggested for this indicator or objective.

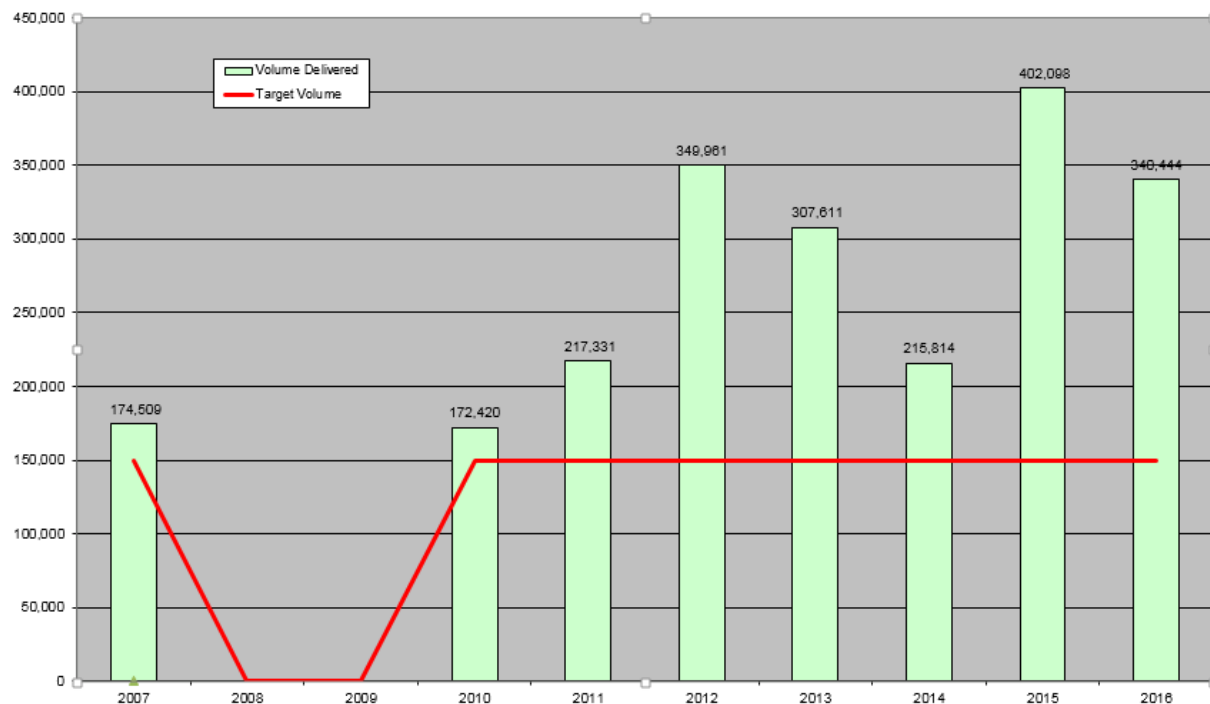
2.46 SUMMER AND FALL DELIVERIES

Criterion 5:	Element(s): 5.2
Economic and Social Benefits	Communities and Sustainability
CSA Core Indicator(s): 5.2.1 Level of investment in initiatives that contribute to community sustainability	
Indicator Statement	Target Statement
Volume (m ³) of timber delivered annually to Canfor Chetwynd mill between May 1st and October 31st	Minimum of 150,000 m ³ coniferous delivered to Canfor Chetwynd mill
Value(s): Local Employment	
SFM Objective: We will ensure local communities and contractors have the opportunity to share in benefits such as jobs, contracts and sales.	

STATUS AND COMMENTS:

This indicator was suspended in 2008 and 2009 when the mill was curtailed. There has been consistent achievement of this indicator when the mill is operating. Since 2015 there has been no significant downtime to mill operations. In 2016 between May 1st and October 31st Canfor delivered 340,444m³ of volume to the Chetwynd mill.

Figure 15: Summer and Fall Deliveries



REVISIONS:

No revisions are suggested for this indicator or objective.

2.47 LEVEL OF INVESTMENT IN TRAINING AND SKILLS DEVELOPMENT

Criterion 5:	Element(s): 5.2
Economic and Social Benefits	Communities and Sustainability
CSA Core Indicator(s): 5.2.2 Level of investment in training and skills development	
Indicator Statement	Target Statement
Consistency with training plans and requirements	Training will be 100% consistent with established training requirements
Value(s): Investment in People	
SFM Objective: We will invest resources to enhance safety and environmental knowledge and performance.	

STATUS AND COMMENTS:

All Canfor and BCTS staff were trained according to their training requirements for the reporting period in the 2016 – 2017 reporting year.

REVISIONS:

No revisions are suggested for this indicator or objective.

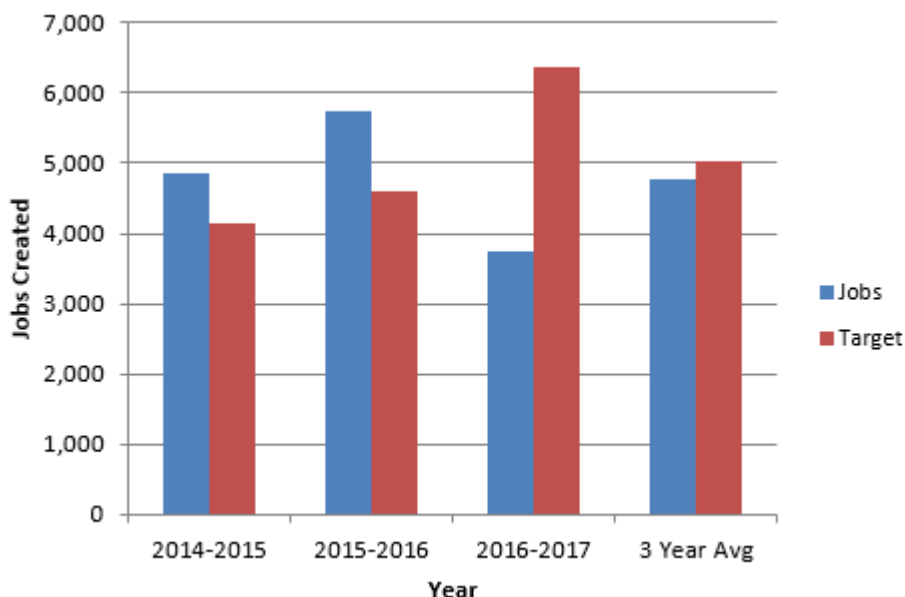
2.48 LEVEL OF DIRECT AND INDIRECT EMPLOYMENT

Criterion 5:	Element(s): 5.2
Economic and Social Benefits	Communities and Sustainability
CSA Core Indicator(s): 5.2.3 Level of direct and indirect employment	
Indicator Statement	Target Statement
Level of direct and indirect employment	AAC* employee multiplier, 3 year rolling average
Value(s): Local Employment	
SFM Objective: We will contribute to local employment.	

STATUS AND COMMENTS:

Between April 1, 2016 and March 31, 2017 the number of direct and indirect jobs created by the harvesting of timber from the TFL was 6,380. Target employment is achieved when 100% of the volume available in the Annual Allowable Cut (AAC) is harvested. Achievement of this indicator is based on the harvest performance in a 3 year period where no less than 90% of the target will be achieved. In the 2016 – 2017 reporting period, the TFL saw an increase in the AAC for Canfor and BCTS for operations on the TFL. As this indicator reports on both BCTS and Canfor volume, actual harvest volume is recorded. BCTS continues to work towards developing and selling their apportionment on the TFL which should increase the number of jobs created which will continue to close the gap between the actual number of jobs created, and the target for each year. For this indicator, no less than 90% of the target will be achieved. The 3 year rolling average is at 94% so this indicator is considered met. See table below for current status.

Table 21: Employment Created – 3 Year Rolling Average



REVISIONS:

No revisions are suggested for this indicator or objective.

2.49 LEVEL OF ABORIGINAL PARTICIPATION IN THE FOREST ECONOMY

Criterion 5:	Element(s): 5.2
Economic and Social Benefits	Communities and Sustainability
CSA Core Indicator(s): 5.2.4 Level of Aboriginal participation in the forest economy	
Indicator Statement	Target Statement
Opportunities available for First Nations to participate in the forest economy	Report annually the number and type of opportunities available to First Nations to participate in the forest economy
Value(s): Forest Economy	
SFM Objective: We will seek Aboriginal participation in the forest economy	

STATUS AND COMMENTS:

In 2016 - 2017 reporting period there were 6 opportunities for First Nations to be involved in the forest economy. Canfor put out a contract for one project for recreation site maintenance on the TFL and 1 opportunity for First Nations to participate in an archaeology impact assessment conducted on the TFL as well as 1 wildlife study opportunity that First Nations wanted to

participate in for the winter component in 2017. There were 3 timber sale licences that were offered to the public by BCTS.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.50 FIRST NATIONS AWARENESS TRAINING

Criterion 6:	Element(s): 6.1
Society's Responsibility	Aboriginal and Treaty Rights
CSA Core Indicator(s): 6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights	
Indicator Statement	Target Statement
First Nations awareness training.	100% of Canfor and BCTS staff involved with First Nations shall receive First Nations awareness training.
Value(s): Treaty and Aboriginal Rights	
SFM Objective: We will recognize and respect Treaty 8 Rights.	

STATUS AND COMMENTS:

All Canfor and BCTS staff have received First Nations awareness training.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.51 CONSULTATION AND INFORMATION SHARING WITH FIRST NATIONS ON MANAGEMENT PLANS

Criterion 6:	Element(s): 6.1, 6.4
Society's Responsibility	Aboriginal and Treaty Rights; Fair and Effective Decision-Making
CSA Core Indicator(s): 6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans	
6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities	
Indicator Statement	Target Statement
Consultation and Information sharing with First Nations on management plans	Information Sharing and Consultation will occur with affected First Nations on 100% of Management Plans
Value(s): Treaty and Aboriginal Rights, Level of Knowledge for Decision Making	
SFM Objective: We will recognize and respect Treaty 8 Rights. We will provide information to public and First Nations about forest ecosystem values and management. We will have an effective and satisfactory process that enables public participation of stakeholders and First Nations.	

STATUS AND COMMENTS:

Numerous meetings, flights and discussions have taken place over the 2016 - 2017 reporting year to ensure First Nations are provided an opportunity to provide comments and share site specific information relating to the various Fibre Development Plans/Forest Operating Plans and herbicide treatment plans (Notification of Intent to Treat – NITs). At the request of First Nations the information sharing process has changed slightly to include a smaller number of blocks shared more frequently with digital files being included in an acceptable format to allow for GIS overlay with Traditional Use Data held by First Nations.

In the 2014 reporting year the information sharing process was revised to include the referral of general areas to be considered for block development ahead of the actual block design and proposed block information sharing process. The purpose of adding an opportunity to comment earlier in the proposed block design process was to allow First Nations to comment on the larger polygon to identify site specific concerns First Nations have about the area that could be incorporated into the block design process. These comments could then be considered in the proposed block development stage and allow for more dialogue between Canfor and First Nations to ensure concerns are addressed as early as possible. This process continues to be monitored and is subject to revision at the request of First Nations and Canfor. This process seems to be working as First Nations have provided comments which have allowed for subsequent block development to adjust proposed boundaries to exclude features and/or culturally significant features and values.

Canfor Management Plans consulted on included: (1) the fall 2016 Fibre Development/Forest Operating Plan which identifies proposed harvest cut blocks for both Canfor and BCTS, (2) the May 2016 Trapper Creek Fibre Development/Forest Operating Plan, (3) the annual Notification of Intent to Treat, and (4) the Pest Management Plan (PMP) which will be in effect from 2016 to 2021. BCTS also consulted on a Notification of Intent to Treat (NIT) which listed the reforested areas that are scheduled for vegetative control utilizing herbicides for timber sales that were previously offered and sold by BCTS.

REVISIONS:

No revisions are suggested for this indicator.

2.52 DIVERSIFYING THE LOCAL ECONOMY

Criterion 6:	Element(s): 6.3
Society's Responsibility	Forest Community Well-Being and Resilience
CSA Core Indicator(s): 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	
Indicator Statement	Target Statement
Primary and by-products that are bought, sold, or traded with other forest dependent businesses in the local area.	On an annual basis at least 5 first order wood products will be provided for production from trees harvested from the DFA.
Value(s): Strengthening and Diversifying Community Businesses and Business Opportunities	
SFM Objective: We will provide opportunities for local economic development.	

STATUS AND COMMENTS:

Over 2016-2017 reporting year there were 6 products (lumber, trim blocks, chips, white wood, hog, and pellets) produced by the Chetwynd Sawmill. All of these products were sold or had agreements in place for their use.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.53 SAFETY OVER THE DFA

Criterion 6:	Element(s): 6.3
Society's Responsibility	Forest Community Well-Being and Resilience
CSA Core Indicator(s): 6.3.2 Evidence of co-operation with DFA-related workers and their unions to improve and enhance safety standards, procedures, and outcomes in all DFA-related workplaces and affected communities 6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved	
Indicator Statement	Target Statement
Implementation and maintenance of certified safety program	Canfor and BCTS will implement and maintain certified safety programs
Value(s): Level of Safety Committed to Operations	
SFM Objective: We will maintain safety certification and contribute to improving the safety of operations on the DFA	

STATUS AND COMMENTS:

Throughout the 2016-2017 year Canfor operated under its Occupational Health & Safety system and maintained its BC Forest Safety Council Safe Companies Certification. BCTS also maintained their Safe Companies Certification.

To ensure safety is of the utmost priority, Canfor and BCTS require that all contractors who conduct work on the DFA are also Safe Companies Certified or certified to an equivalent safety certification standard.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.54 PUBLIC ADVISORY COMMITTEE SATISFACTION

Criterion 6:	Element(s): 6.4
Society's Responsibility	Fair and Effective Decision-Making
CSA Core Indicator(s): 6.4.1 Level of participant satisfaction with the public participation process 6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general	
Indicator Statement	Target Statement
PAG established and maintained a satisfaction survey established according to Terms of Reference	80% satisfaction from surveys
Value(s): Level of Knowledge for Decision Making	
SFM Objective: We will provide information to public and First Nations about forest ecosystem values and management.	

We will have an effective and satisfactory process that enables public participation of stakeholders and First Nations.

STATUS AND COMMENTS:

Throughout the 2016-2017 reporting year, the PAC has remained successful in staying on track holding at two meetings (as outlined in the Terms of Reference) and one field tour as well between April 1, 2016 and March 31, 2017. The PAC reviewed all mandatory items including the 2016 Matrix and the Terms of Reference specifically as they related to the number of required meetings per year, timeline updates and member and advisor roles and responsibilities. Discussions included topics such as forest certification, changes to the CSA standards changes and the upcoming gap analysis to update the SFMP, caribou habitat and best management practices for operations on the TFL and in the Peace Region in general, as well as reviewing the harvest method indicator as a result of an external audit OFI. The PAC also completed an assessment of the PAC satisfaction with the public participation process.

The PAC’s level of satisfaction with the public participation process was assessed using a standardized survey administered at the October 2015 meeting. Overall the PAC member’s remains satisfied with the process and would like to continue to see licensee efforts to recruitment new members and public for the meetings. As a result licensees continue to put forth the effort into actively recruiting new members and soliciting public attendance at these meetings. Recruitment ads continue to be included in the local papers prior to the PAC meetings and the Canfor Planning Supervisor calls and/or emails PAC members prior to the meetings to help encourage member participation. The average satisfaction score achieved was 4.1 out of 5 or 83%. Public Advisory Committee members also requested that licensees’ share new information with the PAC regarding impacts to the environment, sustainability and on-the-ground forestry activities and plans with the group.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.55 PUBLIC ADVISORY COMMITTEE

Criterion 6:	Element(s): 6.4
Society’s Responsibility	Fair and Effective Decision-Making
CSA Core Indicator(s): 6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general	
Indicator Statement	Target Statement
Public Advisory Committee	We will establish and maintain Public Advisory Committee and generally hold at least one meeting annually.
Value(s): Level of Knowledge for Decision Making	
<p>SFM Objective: We will provide information to public and First Nations about forest ecosystem values and management. We will have an effective and satisfactory process that enables public participation of stakeholders and First Nations.</p>	

STATUS AND COMMENTS:

Between April 1, 2016 and March 31, 2017 there were two PAC meetings and one field tour conducted. Mandatory items including the 2016 Matrix was reviewed and a discussion about the changes to the CSA-Z809 standards were also talked about with the agreement that once the gap analysis was complete, the results would be discussed at that meeting and any new indicators/ targets that needed to be added or updated, would be discussed at a future meeting. The October 2016 meeting reviewed the audit findings, and a review of the harvest method indicator. The June field tour visited the Chetwynd Sawmill and Pellet Plant.

Table 22: Public Advisory Committee Meetings

Year	Number of PAC Meetings
2008	1
2009	1
2010	1
2011	3
2012	2
2013	0
January 1, 2014- March 31, 2015	4
April 1, 2015 – March 31, 2016	4
April 1, 2016 – March 31, 2017	3

The Chetwynd PAC continues to aim to have at least two meetings per year (as needed) and to try to have a field trip each year during the months of June or July, to inform members about forestry activities and/or topics of interest as they relate to forest management on the TFL.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.56 PUBLIC ADVISORY COMMITTEE TERMS OF REFERENCE

Criterion 6:	Element(s): 6.4
Society's Responsibility	Fair and Effective Decision-Making
CSA Core Indicator(s): 6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general	
Indicator Statement	Target Statement
Terms of reference (TOR) for the Chetwynd TFL 48 DFA public participation process	Obtain PAC acceptance of TOR for public participation process bi-annually (every 2 years)
Value(s): Level of Knowledge for Decision Making	
SFM Objective:	
We will provide information to public and First Nations about forest ecosystem values and management.	
We will have an effective and satisfactory process that enables public participation of stakeholders and First Nations.	

STATUS AND COMMENTS:

The Terms of Reference (TOR) was reviewed and updated with the PAC at the February 17, 2016 PAC meeting. The 'number of required meetings per year', 'timeline updates' and 'member and advisor roles and responsibilities' were updated. The next required review of the PAC Terms of Reference will be in 2018 at the early spring/late winter meeting to ensure this target remains on track.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.57 EDUCATIONAL OPPORTUNITIES

Criterion 6:	Element(s): 6.5
Society's Responsibility	Information for Decision-Making
CSA Core Indicator(s): 6.5.1 Number of people reached through educational outreach	
Indicator Statement	Target Statement
The number of forestry related educational opportunities provided to the general public	On an annual basis two or more opportunities will be conducted that will promote forestry awareness to the general public.
Value(s): Level of Knowledge for Decision Making	
SFM Objective: We will have an effective and satisfactory process that enables public participation of stakeholders and First Nations.	

STATUS AND COMMENTS:

Between April 1, 2016 and March 31, 2017 there were three activities that were conducted to promote the awareness of forestry to the general public.

At the beginning of April 2016, the annual Chetwynd Tradeshow was held at the local rec centre. Canfor set up a booth which invited the public to learn about employment opportunities at Canfor in the sawmills as well as invite public to attend the local PAC meetings and to potentially join the group as a member for the open seats with the PAC.

In early May 2016 Canfor also participated in an event put on at a local First Nation to help educate local community members with regard to employment opportunities in the forest sector with Canfor.

In July 2016 a field tour was conducted for the PAC which invited the public to attend to learn more about forestry operations on the TFL. The local sawmill and pellet plant were both toured and a discussion took place about the use of 'waste' material from saw logs and the 'tree to lumber' process which explained how timber is harvested and what happens after it is removed from a block and the various products that can be created from the standing timber.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.58 RESPONSE TO PUBLIC INQUIRIES

Criterion 6:	Element(s): 6.5
Society's Responsibility	Information for Decision-Making
CSA Core Indicator(s): 6.5.2 Availability of summary information on issues of concern to the public	
Indicator Statement	Target Statement
Percentage of timely responses to public inquiries	We will respond to 100% of public inquiries concerning our forestry practices within one month of receipt and provide summary to PAC annually
Value(s): Level of Knowledge for Decision Making	
SFM Objective: We will provide information to public and First Nations about forest ecosystem values and management.	

STATUS AND COMMENTS:

In the reporting period between April 1, 2016 and March 31, 2017 there was one inquiry from a local trapper regarding Canfor's activities on the TFL. The trapper requested maps for his trapline area along with some questions about the AAC for the TFL following the McAllister fire, and the actions that are taken by both licensees and the wildfire branch, before and after fires are discovered on the TFL. A letter was drafted to answer the questions brought forward and a meeting took place to review and explain the Chief Forester's AAC decision for the TFL.

The requested information was provided within the target timeline.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.59 DISTRIBUTION/ACCESS TO SFM PLAN, ANNUAL REPORTS AND AUDIT RESULTS

Criterion 6:	Element(s): 6.5
Society's Responsibility	Information for Decision-Making
CSA Core Indicator(s): 6.5.2 Availability of summary information on issues of concern to the public	
Indicator Statement	Target Statement
Distribution/access to SFM Plan, Annual Reports and Audit Results	All SFM plans, annual reports, and audit reports will be made available during open houses, on Canfor's website (http://www.canfor.com/sustainability/certification/csa.asp), others upon request and distributed to PAC members and advisors
Value(s): Level of Knowledge for Decision Making	
SFM Objective: We will provide information to public and First Nations about forest ecosystem values and management.	

STATUS AND COMMENTS:

The SFM Plan for TFL 48 is available on Canfor's website at the following location (<http://www.canfor.com/responsibility/environmental/certification>). Also included are copies of annual reports and summaries of the 3rd party external audits completed on TFL 48. Copies of the above were circulated to members of the PAC.

On-site internal and external audits were conducted in 2016 for TFL 48 and the results of both audits were discussed with the PAC in the October 2016 PAC meeting.

At the fall meeting the results of all indicators requiring data analysis were discussed with the PAC and any indicators considered 'not met' were shared with the PAC at the October 2016 meeting and the final list was emailed to the group before December 2017. However, as this annual report was published to the website after December 31, 2017, this target is considered not met for this reporting year.

REVISIONS:

No revisions are suggested for this indicator or objective.

1 ABBREVIATIONS AND DEFINITIONS

AAC	Annual Allowable Cut
AOA	Archaeological Overview Assessment
AOP	Annual Operating Plan
AIA	Archaeological Impact Assessment
AUM	An animal unit month (AUM) is the quantity of forage consumed by a 450-kg cow (with or without calf) in a 30-day period.
BEC	Biogeoclimatic Ecological Classification
BWBS	Boreal White and Black Spruce BEC zone
CMI	Change Monitoring Inventory plots used to assess long term performance of managed stands
CMT	Culturally Modified Tree
COSEWIC	Committee on Status of Endangered Wildlife in Canada
DCMP	Dunlevy Creek Management Plan
DFA	Defined Forest Area. Used interchangeably with TFL or TFL 48
ESSF	Engleman Spruce Subalpine Fir BEC zone
FDP	Forest Development Plan
FSP	Forest Stewardship Plan. Replaces FDP under the Forest and Range Practices Act
Genus	Canfor's forest information management system. Includes both spatial and attribute information for our operational data including harvest areas, roads, and silviculture.
GPS	Global Positioning System
GY	Growth and Yield
LRMP	Land and Resource Management Plan
LTHL	Long Term Harvest Level
LTSY	Long Term Sustained Yield
LU	Landscape Unit
MFLNRO	Ministry of Forests, Lands and Natural Resource Operations
NIT	Notification of Intent to Treat
NDU	Natural Disturbance Units
NVAF	Net Volume Adjustment Factor
OSB	Oriented Strand Board
PAC	<ul style="list-style-type: none"> • Permanent Access Corridors (also Permanent Access Structures is used) • Public Advisory Committee
Phase 2 plots	Unbiased ground sample plots completed as part of the Vegetation Resource Inventory for TFL 48.

<http://srmwww.gov.bc.ca/vri/standards/index.html> - vri

ROS	Recreation Opportunity Spectrum
RMZ	Riparian Management Zone
RRZ	Riparian Reserve Zone
SBS	Sub Boreal Spruce BEC zone
SFM(P)	Sustainable Forest Management (Plan)
SP	Site Plan/Silviculture Prescription (Forest and Range Practices Act/Forest Practices Code Act of BC)
TFL	Tree Farm Licence
TSA	Timber Supply Area
TSR	Timber Supply Review
TUS	Traditional Use Study
VQO	Visual Quality Objective
VIA	Visual Impact Assessment
VLI	Visual Landscape Inventory
VRI	Vegetation Resource Inventory
VSC	Visual Sensitivity Class
WCB	Workers Compensation Board
WTP	Wildlife Tree Patch