SUSTAINABLE FOREST MANAGEMENT PLAN 4

2011 ANNUAL REPORT

TFL 48

Canadian Forest Products Ltd.
Chetwynd Division
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Canadian Forest Products Ltd.

Chetwynd Operations — TFL 48

Preparation Coordinated by:

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EXECUTIVE SUMMARY

As shown in the following Table; of the 59 Indicators 7 were not reported on (12%), 47 indicators met the targets (80%) and in 5 instances targets were not met (8%).

Table 1: Summary of 2011 Performance

Indicator	Target			
	Met	Not Met	Not Reported (Next Date for Reporting)	Recommend Reporting be Suspended
2.1 Ecosystem Representation	✓			
2.2 Forest Types			2015	
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			2015	
2.9 Wildlife Habitat Areas, Ungulate Winter Ranges and Dunlevy Creek Management Plan	✓			
2.10 Habitat Supply for Species of Public Concern			2015	
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			2015	
2.20 Permanent Access Corridors			2015	
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	✓			
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			2017	
2.34 Ecosystem Carbon Storage (Mg) in the DFA			2017	
2.35 Range Opportunities		✓		
2.36 Harvest Method		✓		
2.37 Proportion of Harvesting Consistent with Visual Quality Objective	✓			
2.38 Back Country Condition	✓			

Indicator	Target			
	Met	Not Met	Not Reported (Next Date for Reporting)	Recommend Reporting be Suspended
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 and BC Timber Sales (Dawson Creek) staff and Louisiana Pacific staff on behalf of Tembec 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. This report was reviewed by the PAC on May 3, 2012.

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Appendix 1: Abbreviations and Definitions

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. The 2011 Annual Report is a summary report on the status of each indicator and provides revisions to several indicators, targets, or the way they are measured.

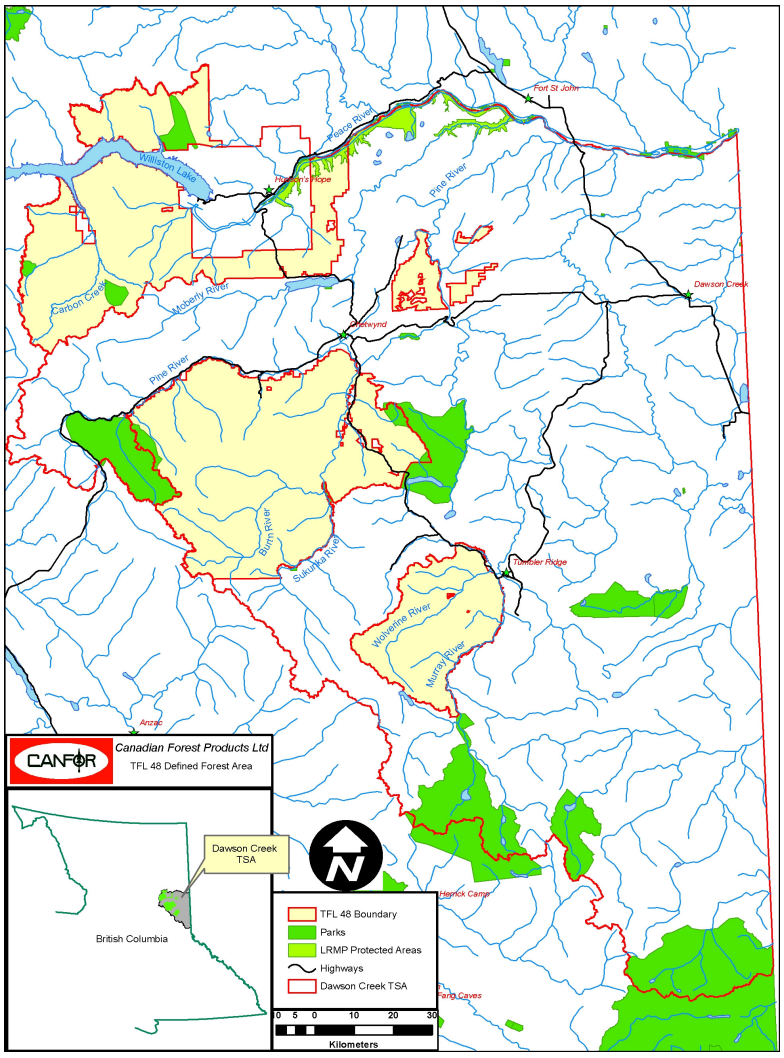


Figure 1: Tree Farm Licence 48

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. For additional information on the Indicators and Objectives, or the practices involved, the reader should refer to Canfor's Sustainable Forest Management Plan 4 – December 2011 located on the Canfor corporate website at:
http://www.canfor.com/responsibility/environmental/certification

The Public Advisory Committee reviewed this report on May 3, 2012.

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 provided by Tembec for harvesting, road construction and silviculture activity was included into applicable indicators.

1.2 SIGNIFICANT CHANGES

A significant development in the management of TFL 48 is the revision of SFMP4 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.

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 (3, 6, 7, 10, 21) 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:

In 2011 there were a total of 41 blocks harvested on the TFL. Canfor harvested 30 blocks. Two blocks contained the presence of rare ecosystems and in both cases the rare ecosystems were reserved from harvest. BCTS harvested 5 blocks of which none contained rare ecosystems. Tembec harvested 6 blocks and none of the 6 blocks contained the presence of rare ecosystems.

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 2010 and was reported on in the 2010 Annual Report. The next time this indicator will be updated will be in 2015.

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

	Area by Forest Type					
Forest Type	**MP 3 %[1]**	**2005**	**%**	**2010**	**%**	**Target Range**
Coniferous	80%	407,906	80%	423,107	80%	75-85%
Mixed - Coniferous	5%	26,477	5%	27,374	5%	4-6%
Mixed - Deciduous	3%	17,723	3%	18,121	3%	2-4%
Deciduous	12%	62,437	12%	63,743	12%	9-15%
Grand Total		514,543	100%	532,345	100%	

REVISIONS:

No revisions are suggested for this indicator or objective.

[1] MP 3 data is shown as a percent due to a slight change in the way this indicator is reported. The indicator has change to reporting only stands greater than 20 years old and there have been some changes to the area of TFL 48.

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 Table11
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 of 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 (See Table).

Targets are met for the conifer NDU/BEC units: **Boreal Plains; Boreal Foothills – Valley;** and **Boreal Foothills – Mountain; Omineca – Valley** (See Table 4).

Targets that are not met include **Omineca – Mountain**, and **Wet Mountain**. These 2 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 deficit in the amount of late seral since this indicator was developed. There is no harvesting activity planned within these two units.

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	BWBSmw 1	3,053	8%	3,497	10%	14,673	40%	14,158	39%	18,699	%	15,053	18,780	51%	15,136	36,456	10%	
	BWBSwk 1	66	2%	119	3%	1,918	48%	1,881	48%	1,976	50%	1,580	1,959	49%	1,563	3,960	10%	
	ESSFmv 2	11	2%	11	3%	188	43%	178	41%	237	55%	193	247	56%	203	436	10%	
	SBS wk 2		0%		0%	11	28%	11	28%	29	72%	N/A	29	72%	N/A	40	N/A	
Boreal Plains - Deciduous Total		3,130	8%	3,627	9%	16,790	41%	16,228	40%	20,941	51%	16,852	21,015	51%	16,928	40,892	10%	0
Boreal Foothills - Valley - Deciduous	BWBSmw 1	2,623	12%	2,697	13%	6,514	30%	6,045	28%	12,363	58%	10,213	12,748	59%	10,599	21,500	10%	
	BWBSwk 1	40	3%	40	3%	912	64%	905	63%	484	33%	340	491	34%	347	1,436	10%	
	BWBSwk 2	274	6%	274	6%	1,330	27%	1,330	27%	3,359	67%	2,863	3,359	67%	2,863	4,963	10%	
	SBS wk 2	453	5%	588	7%	3,156	38%	2,773	33%	4,738	57%	3,903	4,976	60%	4,142	8,346	10%	
Boreal Foothills - Valley - Deciduous Total		3,390	9%	3,599	10%	11,912	33%	11,053	31%	20,944	58%	17,319	21,574	59%	17,951	36,245	10%	0
Grand Total		6,520	8%	7,226	9%	28,702	37%	27,281	35%	41,885	55%		42,589	56%		77,137		

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

NDU	BEC	<40				40-100				101-140				141+						Total Forested Area	141+ Target	Years to Meet Target
		Current		Projected		Current		Projected		Current		Projected		Current			Projected					
		Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Surplus (Deficit)	Ha	%	Surplus (Deficit)			
Boreal Plains - Conifer	BWBSmw 1	9,587	29%	10,845	32%	6,318	19%	6,166	18%	10,017	30%	8,970	27%	7,557	22%	5,884	7,458	23%	5,786	33,464	5%	
	BWBSwk 1	3,869	16%	6,499	27%	3,655	15%	3,239	14%	9,528	40%	7,788	33%	6,747	29%	5,557	6,232	26%	5,044	23,798	5%	
	ESSFmv 2	844	7%	1,458	11%	659	5%	558	4%	5,379	41%	4,888	38%	6,178	47%	5,530	6,058	47%	5,410	12,962	5%	
	SBS wk 2	0	0%	0	0%	178	89%	178	89%	5	3%	5	3%	17	8%	N/A	17	8%	N/A	201	N/A	
Boreal Plains - Conifer Total		14,300	20%	18,802	27%	10,810	15%	10,141	14%	24,929	35%	21,651	31%	20,499	30%	8,527	19,765	28%	7,804	70,425	17%	20
Boreal Foothills - Valley - Conifer	BWBSmw 1	6,036	19%	7,049	22%	5,348	17%	5,003	16%	8,385	26%	8,208	25%	12,509	38%	10,250	11,976	37%	9,719	32,278	7%	
	BWBSwk 1	1,120	21%	1,190	22%	1,074	20%	1,069	20%	1,006	19%	865	16%	2,238	40%	1,857	2,308	42%	1,928	5,438	7%	
	BWBSwk 2	829	11%	828	11%	2,470	33%	2,470	33%	2,746	36%	2,744	36%	1,493	20%	965	1,485	20%	958	7,539	7%	
	SBS wk 2	18,116	22%	24,616	30%	9,909	12%	8,481	10%	23,331	28%	19,759	24%	31,582	38%	25,776	29,989	36%	24,190	82,938	7%	
Boreal Foothills - Valley - Conifer Total		26,101	20%	33,683	26%	18,801	15%	17,023	13%	35,468	28%	31,576	25%	47,822	37%	18,338	45,758	36%	16,309	128,193	23%	10
Boreal Foothills - Mountain	ESSFmv 2	9,584	9%	12,348	12%	15,421	15%	14,923	14%	27,174	26%	25,005	24%	53,866	50%	43,261	53,673	50%	43,078	106,045	10%	
	ESSFmv 4	756	6%	756	6%	3,977	34%	3,977	34%	4,208	36%	4,207	36%	2,752	24%	1,583	2,745	24%	1,576	11,693	10%	
	ESSFwc 3	721	3%	975	4%	3,751	15%	3,399	14%	9,150	37%	8,076	33%	10,902	45%	8,450	12,042	49%	9,593	24,524	10%	
	ESSFwk 2	3,999	15%	5,635	21%	3,524	13%	3,255	12%	9,900	38%	8,332	32%	8,930	34%	6,295	9,115	35%	6,481	26,353	10%	
Boreal Foothills - Mountain Total		15,060	9%	19,714	12%	26,673	16%	25,554	15%	50,432	30%	45,620	27%	76,450	45%	20,807	77,575	46%	21,982	168,615	33%	10
Omineca - Valley	BWBSmw 1		0%		0%	10	37%	10	37%	17	63%	17	63%		0%	N/A		0%	N/A	27	N/A	
	SBS wk 2	931	15%	1,101	18%	180	3%	165	3%	2,414	39%	2,361	38%	2,651	43%	2,219	2,549	41%	2,117	6,176	7%	
Omineca - Valley Total		931	15%	1,101	18%	190	3%	175	3%	2,431	39%	2,378	38%	2,651	43%	1,224	2,549	41%	1,122	6,203	23%	0
Omineca - Mountain	ESSFmv 2	926	7%	935	7%	630	5%	630	5%	4,508	34%	4,505	34%	7,082	54%	4,847	7,053	54%	4,822	13,146	17%	
Omineca - Mountain Total		926	7%	935	7%	630	5%	630	5%	4,508	34%	4,505	34%	7,082	54%	(543)	7,053	54%	(558)	13,146	58%	40
Wet Mountain	ESSFmv 2	360	2%	407	3%	2,469	15%	2,469	15%	2,754	17%	2,750	17%	10,687	66%	6,620	10,631	65%	6,567	16,270	25%	
	ESSFwc 3	443	1%	445	1%	2,499	8%	2,363	7%	5,665	17%	5,156	16%	23,902	74%	15,775	24,376	76%	16,291	32,509	25%	
	ESSFwk 2	3,783	14%	3,814	15%	721	3%	715	3%	2,801	11%	2,324	9%	18,924	72%	12,367	19,330	73%	12,784	26,229	25%	
	SBS wk 2	2,411	21%	2,638	23%	891	8%	848	7%	3,219	28%	2,906	25%	5,150	43%	2,232	5,221	45%	2,318	11,671	25%	
Wet Mountain Total		6,997	8%	7,304	8%	6,580	8%	6,395	7%	14,439	17%	13,136	15%	58,663	67%	(14,147)	59,558	70%	(13,012)	86,679	84%	80
Grand Total		64,315	14%	81,539	17%	63,684	13%	59,918	13%	132,207	28%	118,866	25%	213,167	45%		212,258	45%		473,261		

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 all 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	Patch Class (ha)														Total Current	Total Projected
	<50				50-100					100+						
	Current	%	Proj	%	Current	%	Proj	%	Target	Current	%	Proj	%	Target		
Boreal Plains	1,657	10%	1,542	7%	766	5%	808	4%	<15%	14,375	85%	19,372	89%	>50%	16,798	21,723
Boreal Foothills/Omineca	5,385	12%	4,445	8%	6,687	14%	5,098	9%	<20%	34,361	74%	48,558	83%	>40%	46,432	58,102
Wet Mountain	1,314	19%	1,276	18%	1,513	22%	1,256	17%	<25%	4,146	59%	4,705	65%	>60%	6,973	7,237
Grand Total	8,356	12%	7,263	9%	8,966	13%	7,162	8%		52,882	75%	72,635	83%		70,203	87,062

Table 6: Mature Patch Size Class Current and Projected

NDU	Current / Projected	Patch Size Class (ha)							Grand Total	Total Interior Forest %	Interior Forest Target
		<50		50-100		100+					
		ha	%	ha	%	ha	%	Target			
Boreal Plains	Current	8,900	13%	4,498	6%	57,262	81%	>70%	70,660	59%	>30%
	Projected	8,898	13%	4,216	6%	54,588	81%	>70%	67,702	47%	>30%
Boreal Foothills/Omineca	Current	18,068	7%	7,731	3%	235,717	90%	>80%	261,515	59%	>35%
	Projected	18,230	7%	7,991	3%	226,955	90%	>80%	253,176	58%	>35%
Wet Mountain	Current	2,300	3%	307	0%	75,599	97%	>85%	78,206	62%	>60%
	Projected	2,292	3%	317	0%	75,560	97%	>85%	78,168	62%	>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 (>17.5cm 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 2011 there were 35 blocks harvested to which this indicator applied. There were 4 instances where retention was not implemented and in all 4 cases it was due to site factors that enabled the practice requirement be waived. Block T4106 had slopes >30% which poses a safety risk for machines in having to work around retained trees therefore trees were not retained in this area. Blocks T4292 and T4294 are small scale salvage blocks and because of their small size and narrowness, tree retention was restrictive for machinery. Block K1 – 01 had 10% of the gross block area designated under Wildlife Tree Patch (WTP).

Permit - Cutblock #	Required Retention Area (ha)	Site Plan Prescribed Area (ha)	Was indicator applied correctly?
764 – T3020	0.0	0.0	Yes
764 – T3021	0.0	0.0	Yes
764 – T3022	0.0	0.0	Yes
764 – T3023	0.0	0.0	Yes
654 – T4106	22.2	20.4	Yes
750 – T4148	58.5	63.3	Yes
765 – T4154	239.5	239.5	Yes
760 – T4170	19.1	19.1	Yes
774 – T4173	81.4	81.4	Yes
767 – T4174	76.9	76.9	Yes
756 – T4175	11.6	11.6	Yes
776 – T4178	0.0	0.0	Yes
754 – T4182	67.2	126.2	Yes
765 – T4185	156.4	156.4	Yes

Permit - Cutblock #	Required Retention Area (ha)	Site Plan Prescribed Area (ha)	Was indicator applied correctly?
766 – T4186	75.0	75.0	Yes
770 – T4187	43.1	43.1	Yes
757 – T4205	19.9	19.9	Yes
758 – T4206	59.0	59.0	Yes
759 – T4207	26.6	26.6	Yes
755 – T4213	14.4	35.3	Yes
750 – T4214	25.4	25.4	Yes
750 – T4215	9.4	9.4	Yes
502 – T4219	23.0	119.6	Yes
999 – T4288	2.5	2.5	Yes
999 – T4289	3.4	3.4	Yes
999 – T4290	4.7	4.7	Yes
999 – T4291	4.0	4.0	Yes
999 – T4292	0.6	0.0	Yes
999 – T4294	0.3	0.0	Yes
999 – T4295	1.2	1.2	Yes
W02 – 01	10.1	79.8	Yes
W03 – 01	7.3	14.1	Yes
W20 – 01	6.5	18.6	Yes
K1 – 01	57.3	0.0	Yes
F1 – 01	34.4	44.1	Yes

REVISIONS:

No 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 2011. The WTP retention levels exceed the target in all subzones except the ESSFwc3. However 60% or 411 ha of the 689 ha under prescription have been harvested with an irregular shelterwood retention system. Typically 55% of the area is retained between the trails so 55% of the 411 ha is 226 ha plus the 39 ha of WTP prescribed is a total of 265 ha of retention or 38% of the total area under prescription.

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

BEC Sub Zone	Total Area Under Prescription	WTP Area	WTP %
BWBSmw	**8,392**	**1,138**	14%
BWBSwk	**3,008**	**540**	18%
ESSFmv	**6,615**	**751**	11%
ESSFwc	**689**	**39**	6%
ESSFwk	**4,375**	**479**	11%
SBSwk	**10,893**	**1,753**	16%
Grand Total	**33,972**	**4,699**	**14%**

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 (

Table8) shows the summary of riparian reserve and management zones for 2011 as well as the cumulative average from 2000 to 2011. The targets have been met in 2011 and all previous years.

Table 8: Summary of Riparian Reserve and Management Zones in 2000 – 2011

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]
2011	S1 (n=0)	-	50	-	20	-
	S2 (n=4)	-	30	-	20	-
	S3 (n=0)	-	20	-	20	-
	S4 (n=0)	-	0	-	30	-
	S5 (n=0)	**2,122**	0	31.2	30	30.0
	S6 (n=12)	**43,247**	0	6.5	20	20.0
	W3 (n=0)	**1,192**	0	7.8	30	30.0
	W5 (n=0)	-	10	-	40	-
Average 2000 to 2011	S1	**34,694**	50	104.4	20	20.0
	S2	**25,423**	30	98.9	20	20.0
	S3	**33,094**	20	52.2	20	20.0
	S4	**17,026**	0	8.5	30	30.0
	S5	**38,710**	0	20.4	30	30.0
	S6	**325,038**	0	5.7	20	20.0
	W3	**4,423**	0	6.8	30	30.0
	W5	**673**	10	27.3	40	40.0

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 2010 is outlined in the table below as well. Within all NDU's there was an increase in the amount of shrub habitat over time. 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.

The next time this indicator will be reported on will be in 2015. It is anticipated that the next reporting period will contain the highest level of shrub habitat as the analysis considers forest stands less than 30 years of age. 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.

Table 9: Shrub Habitat

NDU	NDU Subunit	Total NDU Area	Baseline Shrub Habitat		2010 Shrub		Baseline Target %
			Ha	%	Ha	%	
Boreal Plains		120,891	15,762	13%	17,803	15%	14%
Boreal Foothills	Valley	178,225	25,245	14%	27,687	16%	12%
	Mountain	205,406	20,936	10%	22,944	11%	11%
Omineca	Valley	6,504	727	11%	812	12%	7%
	Mountain	15,031	1,277	8%	1,719	11%	10%
Wet Mountain		117,618	12,634	11%	14,958	13%	7%
Grand Total		643,676	76,581	12%	85,924	13%	

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 2011 there were no activities within UWR's, WHA's, or the Dunlevy Creek Management Plan 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. The next time this indicator will be reported on will be 2015.

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.

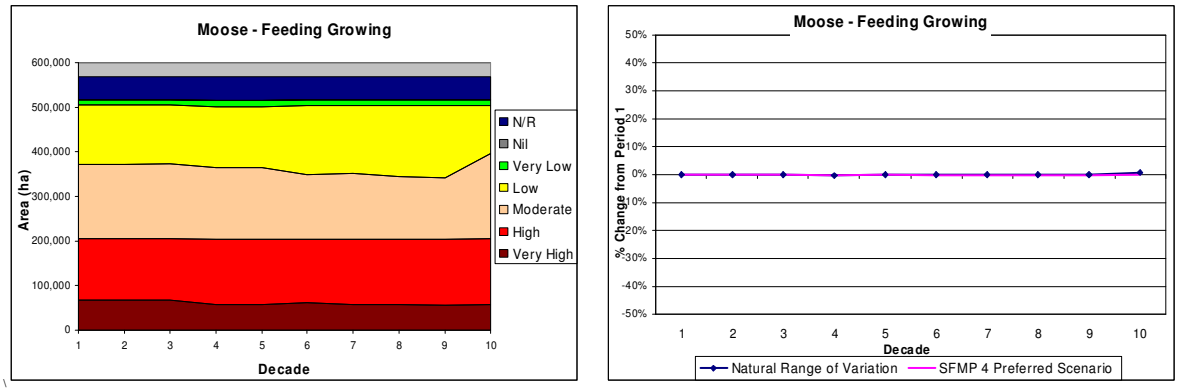


Figure 2: Moose Habitat Supply

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.

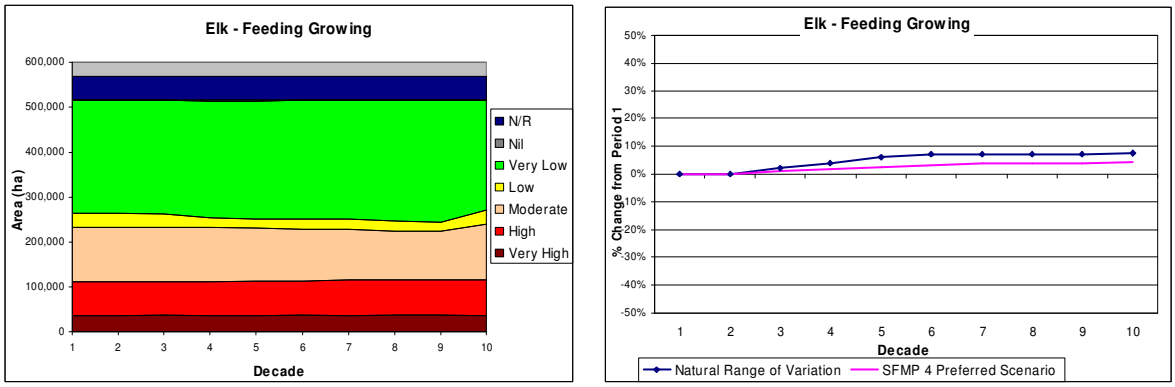


Figure 3: Elk Habitat Supply

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.

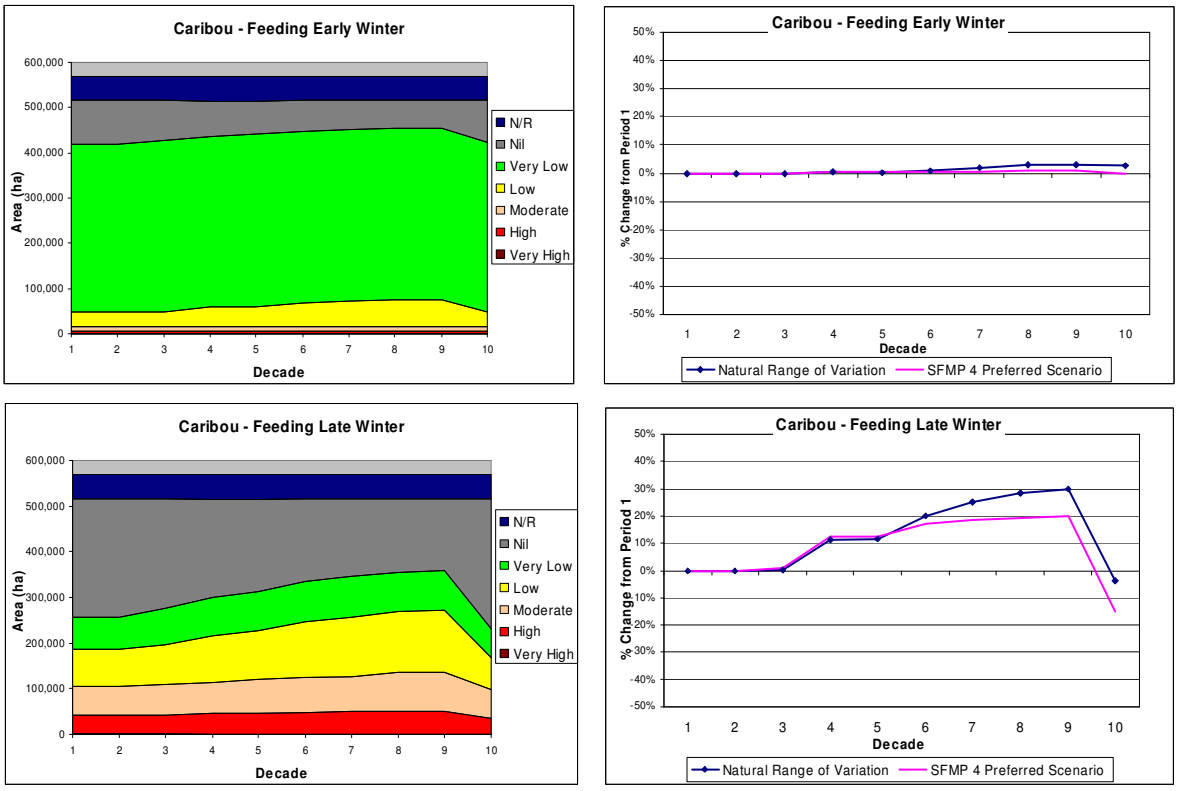


Figure 4: Caribou Habitat Supply

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.

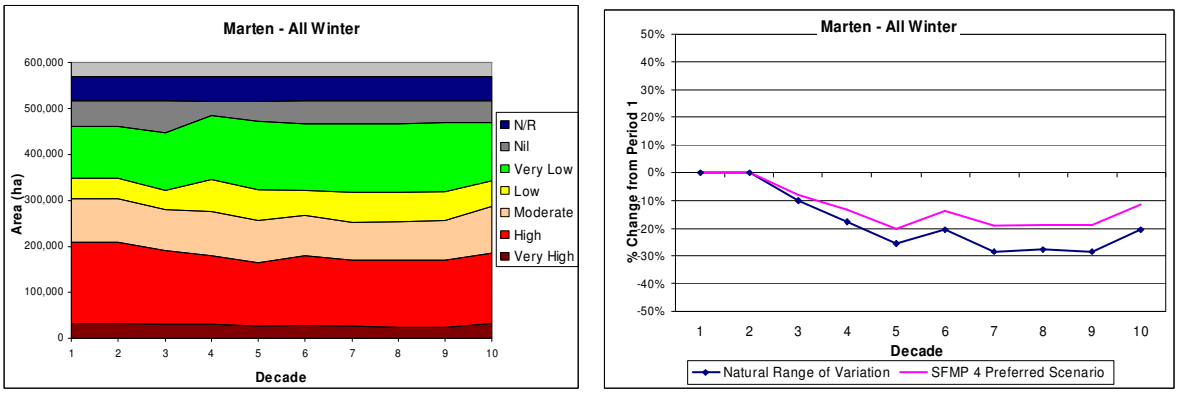


Figure 5: Marten Habitat Supply

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.

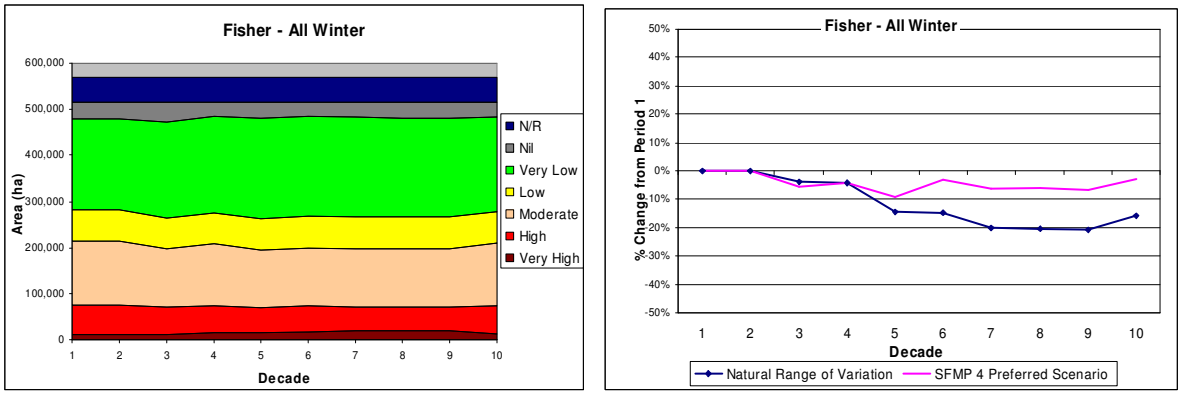


Figure 6: Fisher Habitat Supply

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.

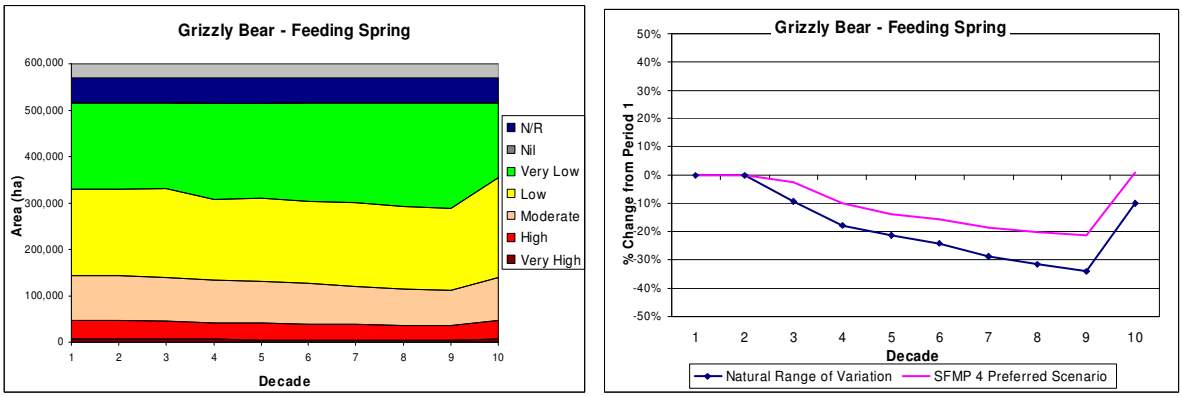


Figure 7: Grizzly Bear Habitat Supply

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.

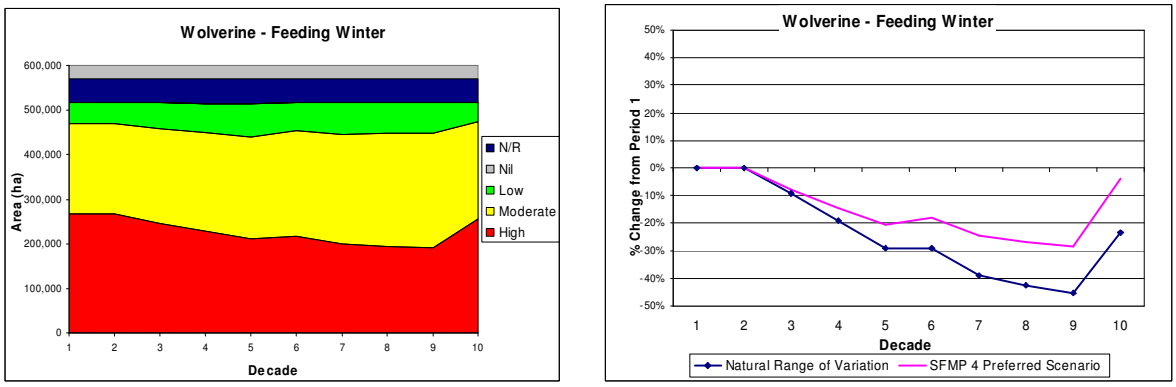


Figure 8: Wolverine Habitat Supply

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 in 2015.

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:

Canfor Chetwynd Division, in partnership with academia and the provincial government, developed an approach for identifying species of potential conservation concern based on stewardship responsibility, trend, threat and vulnerability (Fred Bunnell, pers comm June 23, 2006). The process for identifying species of conservation concern for TFL48 were as followed:

1. List all terrestrial vertebrates, vascular plants and freshwater fish in TFL 48;
2. Extract species of conservation concern based on stewardship responsibility, trend, threat and vulnerability (Squires 2005);
3. Determine which species are forest-dwelling based on previous list;
4. Determine which species are sensitive to forest practices based on the previous list; and
5. Determine if the habitat needs of the species that are sensitive to forest practices are adequately addressed by coarse (i.e., ecosystem representation) and/or medium (i.e., retention of habitat elements) filters. If not, fine scale management strategies will be developed.

Step 5 was completed during 2008 by the completion of the *Guidelines for Species Using Localized Habitats for TFL48*.

The implementation strategy for this indicator was to implement stand level management guidelines on all areas where layout was initiated after October 31, 2005. In 2011 there were 53 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:

No revisions are suggested for this indicator or objective.

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 2011 there were a total of 3,193,836 trees planted on TFL 48 of which Canfor planted 1,669,750. All seeds have been registered with and tracked by the Tree Improvement Branch of the Ministry of Forests Lands and Natural Resource Operations. Licencees were 98.7% 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 2011. Seedlots 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 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:

In 2011 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.

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
CSA Core Indicator(s): 1.4.2 Protection of identified sacred and culturally important sites **6.1.3:** Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur **6.2.1:** Evidence of understanding and use of Aboriginal knowledge through the engagement of willing Aboriginal communities, using a process that identifies and manages culturally important resources and values	
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	
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. We will recognize and respect Treaty 8 rights. We will respect known traditional Aboriginal forest values, and uses.	

STATUS AND COMMENTS:

In 2011 there were no known traditional site-specific aboriginal values and uses identified to participating licencees that were required to be addressed in operational plans.

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
CSA Core Indicator(s): 1.4.2 Protection of identified sacred and culturally important sites **6.1.3:** Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur	
Indicator Statement	**Target Statement**
% conformance to SFM elements pertinent to treaty rights (i.e., hunting, fishing and trapping) defined in Treaty 8	100% conformance to the SFM indicators and targets of the SFM Elements pertinent to sustaining hunting, fishing and trapping, as follows: • 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 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	
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. We will recognize and respect Treaty 8 rights.	

STATUS AND COMMENTS:

In 2011 all indicators in Elements 1.1, 1.2, 3.1 and 3.2 were met.

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 are past the free growing timelines. See Figure 9 for status of areas harvested on TFL where there is a free growing requirement.

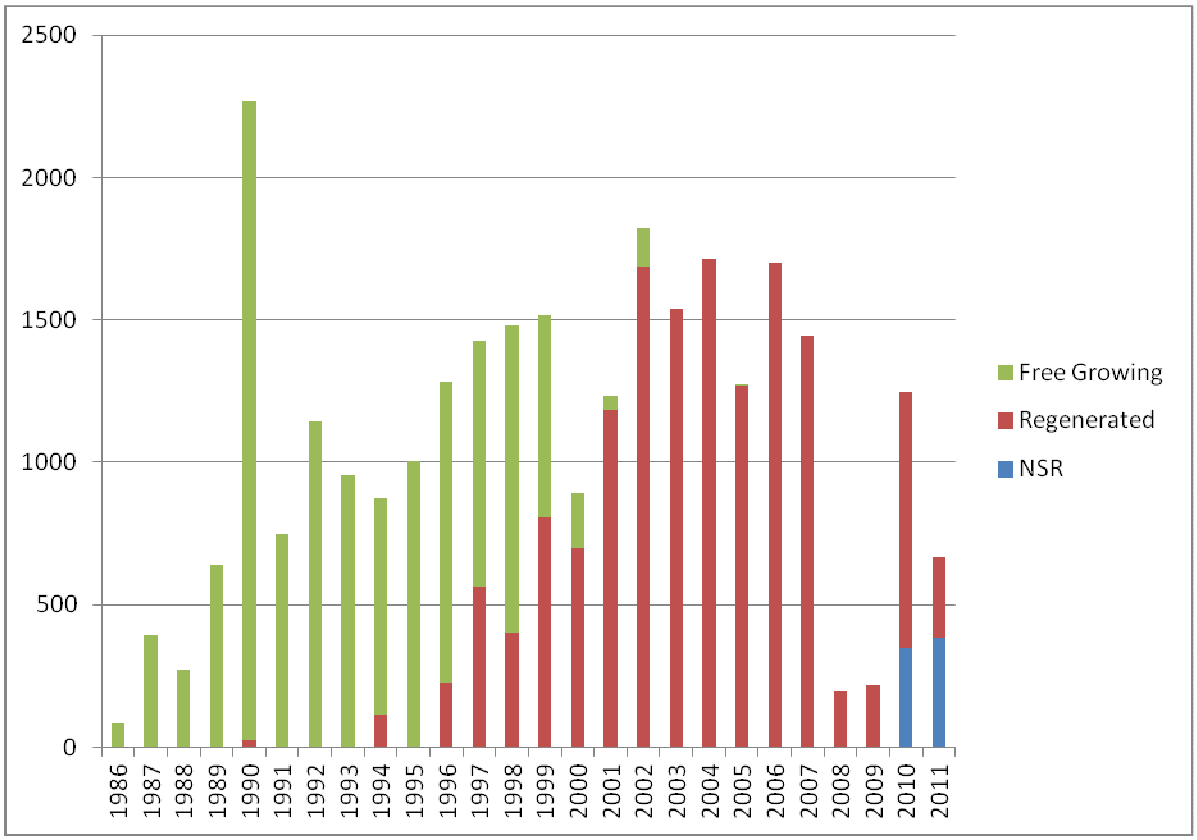


Figure 9: Regeneration/Free Growing Status by Year of Harvest Start

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 2011 the average age of NSR on TFL 48 was 1.50 years for all areas where harvesting started prior to January 1, 2012.

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 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. 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. 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. The utilization of existing development amounted to 105 ha's. Out of the 6,095 ha's of land developed, 105 ha's was able to overlap with other

development thus creating an actual reduction of forested land by 5,990 ha's instead of the entire 6,095 hectares.

This indicator will not be reported on again until 2015 or when the next TSR is conducted for the DFA, whichever occurs the soonest.

Table 10: Reductions to Land Base Due to Other Uses (Excluding Roads[2])

Feature	Total Area (ha)
Well sites[3]	464
Mines [4][5]	2,166
Pipelines	466
Cutlines	1,527
Trails	492
Transmission Lines	980
Grand Total	6,095

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 in 2015.

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 management activities	We will limit impacts on the land base due to the presence of permanent access corridors to less 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:

The following table shows the status to the end of 2010. 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.

[2] Roads are captured in Indicator 0 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 in 2015.

Permanent Access Corridors and are not easily separated as to which are used only by other industries or which are used only by the forest industry.

[3] Includes camps, decking areas, borrow pits and sumps

[4] 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.

[5] Includes roads within mine-cleared areas.

Table 11: 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	1,266	0.20%
1 - ML (25m)	2,292	0.36%
2 - Operational (20m)	2,176	0.34%
3 - Block Perm (10m)	2,634	0.41%
4 - Oil 7 Gas/Utility roads (10m)	889	0.14%
Grand Total	7,973	1.24%

Source VRI 2004

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 in 2015.

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:

December 2011 is the end of Canfor's fifth five year cut control period. The two year mill curtailment caused a significant undercut to Canfor's apportioned volume which could not be recovered from when the mill resumed production in the summer of 2010. BCTS delivered more than their direct allocation in the cut control period. Cut control regulation does not apply to BCTS which is why we see this increase in harvest in this cut control period because between 2002 and 2006 BCTS had under delivered (71.5%) with respect to their allocation. In 2007 there was also an AAC increase. The increase presents BCTS with additional volume (up to 62,588m^3 annually) to which they have access to harvest.

Table 12: 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	1,742,500.0		1,787,732.0	102.6				
1992-1996	1,742,500.0	-41,572.0	1,659,920.5	97.6				
1997-2001	2,025,193.0	82,580.0	1,953,224.2	92.7				

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 (%)	
2002-2006	**2,331,850.0**	**57,575.04**	**2,344,509.91**	**98.1**	**276,750.0**	**197,997.25**	**71.5**	**66,084.52**
2007	595,973	0	488,418	82.0	56,026	0	0	60,931
2008	678,782	0	118,074	17.4	58,630	41,080	75.6	34,522
2009	678,782	0	150,959	22.1	58,630	106,820	196.6	23,189
2010	678,782	0	362,944	53.5	58,630	141,081	240.6	32,405
2011	678,782	0	599,490	88.3	58,630	69,286	118.2	101,108
Running Total	**3,311,101**	**0**	**1,719,885**	**51.9**	**290,546**	**358,267**	**115.7**	**252,155**

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 m^3 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 latest TSR Analysis Report was completed and submitted in August 2006, and the AAC Rationale was effective May 25th, 2007. See Table 13 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 amount of pine harvested in 2011 represented 70% of deliveries which is consistent with the Chief Foresters direction.

Table 13: Annual Allowable Cut and Long-Term Harvest Level

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

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:

There were a total of 41 blocks with harvesting completed in 2011 between West Fraser/BCTS, LP Building Products on behalf of Tembec Industries Inc., 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 41 blocks with harvesting completed in 2011 between West Fraser/BCTS, LP Building Products on behalf of Tembec Industries Inc., 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 was researched in 2010 and will be looked into again in 2012. In 2011 one of the road deactivation contractors was running environmentally friendly lubricants.

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

Currently 5 BEC/site series units are not meeting the predicted SI target. Four of the units have <13.0ha surveyed which is a very limited sampling size and puts into question the statistical validity of the data. The one unit, SBSwk2 pine site series 5, has had 189 ha surveyed and does not meet the target performance. This unit will continue to be monitored to determine if a trend exists. To date there have been no trends or sustained under performance in any particular unit.

Table 14: 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	01	-	-	N/A	1,642.6	18.3	17.7	463.4	19.0	18.0
	02	-	-	N/A	176.0	17.5	9.0	36.9	20.3	12.0
	03	-	-	N/A	178.8	20.4	17.0	126.8	17.6	18.0
	04	-	-	N/A	187.6	17.6	12.0	37.8	19.3	15.0
	05	-	-	N/A	219.3	22.0	18.0	36.7	19.3	18.0
	06	-	-	N/A	69.2	18.0	18.1	0.9	14.5	18.0
	07	-	-	N/A	11.4	15.0	18.0	0.7	18.7	18.0
BWBSmw1 Total		-	-	N/A	2,485.0	18.7	16.6	703.0	18.9	17.6
BWBSwk1	01	-	-	N/A	208.5	19.0	12.0	519.3	17.3	15.0
	02	-	-	N/A	19.2	18.1	9.0	80.0	16.8	12.0
	03	-	-	N/A	104.1	16.0	9.0	74.7	15.9	12.0
	04	-	-	N/A	4.4	21.0	12.0	7.9	13.0	15.0
	05	-	-	N/A	6.6	15.0	15.0	0.6	16.3	15.0
	06	-	-	N/A	6.0	15.0	15.0	0.0	0.0	15.0
BWBSwk1 Total		-	-	N/A	348.9	17.9	11.5	682.6	17.0	14.6
BWBSwk2	01	-	-	N/A	113.8	18.3	12.0	50.6	19.0	15.0
	02	-	-	N/A	1.9	18.0	9.0	0.0	0.0	12.0
	03	-	-	N/A	1.4	18.0	12.0	3.9	19.0	15.0
	04	-	-	N/A	2.5	18.0	9.0	0.0	0.0	12.0
	05	-	-	N/A	2.6	18.0	15.0	0.0	0.0	15.0
BWBSwk2 Total		-	-	N/A	122.2	18.3	11.9	54.6	19.0	15.0
ESSFmv2	01	2,358.0	14.9	12.0	1,423.8	17.7	15.0	758.7	17.5	15.0
	02	139.3	16.3	9.0	102.2	17.7	9.0	63.7	18.5	12.0
	03	122.7	15.6	6.0	40.1	18.3	6.0	55.0	17.7	9.0
	04	810.6	16.4	15.0	179.2	16.8	15.0	207.1	16.8	18.0
	05	12.9	13.3	15.0	5.3	16.5	15.0	0.8	18.6	15.0
	06	1.7	18.0	15.0	0.4	15.8	15.0	0.0	23.5	15.0
ESSFmv2 Total		3,445.1	15.3	12.8	960.1	17.6	14.6	715.9	17.4	15.1
ESSFmv4	01	-	-	12.0	45.8	18.0	15.0	-	-	15.0
	02	-	-	9.0	0.2	18.0	9.0	-	-	12.0
	03	-	-	6.0	0.0	18.0	6.0	-	-	9.0
	04	-	-	15.0	0.5	18.0	15.0	-	-	18.0
ESSFmv4 Total		-	-	10.5	46.6	18.0	15.0	-	-	13.5
ESSFwc3	01	228.4	15.0	15.0	2.3	16.5	15.0	-	-	-
	02	18.5	14.7	9.0	0.0	0.0	9.0	-	-	-
	03	44.5	15.3	15.0	0.7	23.0	15.0	-	-	-
ESSFwc3 Total		291.5	15.0	15.0	3.0	17.9	13.0	-	-	-
ESSFwk2	01	925.3	15.6	15.0	445.9	17.2	15.0	162.6	17.6	N/A

		Species								
		Subalpine Fir			White Spruce			Lodgepole Pine		
BEC	Site Series	Ha	SI	Predicted SI	Ha	SI	Predicted SI	Ha	SI	Predicted SI
	02	469.9	17.4	9.0	61.5	17.7	9.0	55.0	17.4	N/A
	03	358.0	17.4	12.0	66.5	18.4	12.0	14.4	17.4	15.0
	04	339.4	18.6	15.0	135.8	16.5	15.0	13.8	17.1	N/A
	05	226.6	19.6	15.0	102.2	19.1	15.0	4.6	18.8	N/A
	06	38.7	16.5	12.0	9.2	18.8	12.0	1.6	17.5	N/A
ESSFwk2 Total		2,358.0	17.1	12.4	350.3	17.5	14.1	252.1	17.5	15.0
SBSwk2	01	946.5	16.0	15.0	1,476.4	19.9	21.8	914.2	19.3	21.0
	02	25.9	17.8	12.0	198.2	19.1	15.0	82.2	18.8	15.0
	03	256.5	15.3	12.0	590.4	18.9	18.0	872.9	18.8	18.0
	04	118.7	14.6	N/A	697.3	18.9	15.0	268.5	18.1	18.0
	05	175.8	17.3	18.0	558.5	19.4	21.0	181.5	18.6	21.0
	06	33.1	17.8	18.0	192.7	21.8	24.0	12.1	20.4	21.0
	07	6.9	15.6	N/A	114.3	19.2	N/A	37.5	20.9	N/A
SBSwk2 Total		1,563.4	16.0	14.6	3,827.9	19.5	19.7	2,369.0	18.9	19.8
Grand Total		7,658.0	16.0	12.8	9,405.6	19.0	16.9	5,146.5	18.5	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:

Currently 11 plots have been established on TFL 48. Progress to date for the 11 samples shows an average of 128 m^3/ha of which 56 m^3/ha is greater than 17.5 cm.

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 2011 field season a total of 139 crossings were surveyed in the Hasler Creek (120), and Highhat (19) watersheds. Sampling of the above mentioned watersheds is based on the SCQI cumulative effects hazard rating. The Hasler watershed is above the 0.40 target and this is largely due to six specific crossings. Of the six crossings, the majority of these are found on a road system that was newly developed by the mining sector. At the time of the crossing survey no mitigation measures had been set in place to control water flow associated with the road system. Canfor will liaise with the company to determine mitigation measures that will reduce the risk of sediment delivery into adjacent riparian features.

With regard to the Highhat results there were too few samples conducted to have any statistical weighting. The calculated SCQI score is under-estimated. Budget restraints limited the amount of sampling that could be performed. The Highhat watershed along with the high risk Hasler crossings will be re-evaluated in 2012 to ensure road systems do not pose any significant risk to stream health and function.

The cumulative results to date are summarized by watershed in Table 15. The watersheds sampled in 2011 are shaded in the table.

Table 15: SCQI and Water Quality Concerns for Watersheds within TFL 48 – Sampling Completed 2001 to 2011

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	54	0.34	3.66	0.02	1	0.0	0.0	0.0	0.0
					2	66.7	33.3	0.0	0.0
					3	80.0	20.0	0.0	0.0
					4	8.3	83.3	8.3	0.0
					5	0.0	94.1	5.9	0.0
Lower Peace	54	0.38	2.38	0.02	1	0.0	0.0	0.0	0.0
					2	0.0	0.0	0.0	0.0
					3	57.1	42.9	0.0	0.0
					4	6.1	93.9	0.0	0.0
					5	0.0	100.0	0.0	0.0
Gething	52	0.28	4.29	0.02	1	0.0	0.0	0.0	0.0
					2	50.0	50.0	0.0	0.0
					3	80.0	10.0	10.0	0.0
					4	0.0	95.5	4.5	0.0
					5	0.0	100.0	0.0	0.0

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)
Upper Wolverine	51	0.28	16.2	0.09	1	0.0	0.0	0.0	0.0
					2	25.0	75.0	0.0	0.0
					3	60.0	0.0	0.0	40.0
					4	46.7	33.3	13.3	6.7
					5	18.5	44.5	33.3	3.7
Middle Wolverine	22	0.13	3.96	0.02	1	0.0	0.0	0.0	0.0
					2	66.7	0.0	0.0	33.3
					3	72.7	9.1	0.0	18.2
					4	50.0	50.0	0.0	0.0
					5	75.0	25.0	0.0	0.0
Hasler	120	0.63	87.72	0.46	1	0	0	0	0
					2	20.0	80.0	0	0
					3	30.8	53.9	0.0	15.4
					4	7.0	67.5	20.9	4.7
					5	16.9	50.9	20.3	11.9
Brazion	105	0.32	34.48	0.11	1	0	0	0	0
					2	20.0	40.0	0	40.0
					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	19	0.12	0.57	0.0	1	0	0	0	0
					2	0	0	0	0
					3	50.0	50.0	0	0
					4	83.3	16.7	0	0
					5	72.7	18.2	9.1	0
Lower Carbon	37	0.28	3.73	0.03	1	0	100.0	0	0
					2	100.0	0	0	0
					3	33.3	55.5	11.1	0.0
					4	42.9	42.9	14.3	0.0
					5	57.9	31.6	10.5	0.0
Seven Mile	17	0.22	2.96	0.04	1	0	0	0	0
					2	100.0	0	0	0
					3	0	100.0	0	0
					4	14.3	71.4	0	14.3
					5	60.0	20.0	20.0	0
Eleven Mile	22	0.10	0.56	0.00	1	0	100.0	0	0
					2	75.0	25.0	0	0
					3	100.0	0	0	0
					4	50.0	50.0	0	0
					5	60.0	40.0	0	0
Upper Carbon	55	0.12	1.90	0.01	1	75.0	25.0	0	0
					2	57.1	42.9	0	0
					3	33.3	66.6	0	0
					4	20.0	80.0	0	0
					5	60.9	39.1	0	0
Lower Sukunka	191	0.36	70.63	0.13	1	0.0	0.0	0.0	0.0
					2	0.0	66.7	0.0	33.3
					3	10.0	30.0	15.0	45.0
					4	20.2	41.5	10.6	27.7
					5	28.8	37.0	23.3	10.9

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)
Upper Sukunka	90	N/A[2]	N/A[2]	N/A[2]	1	100	0.0	0.0	0.0
					2	0.0	100.0	0.0	0.0
					3	30.0	20.0	20.0	30.0
					4	18.8	43.7	18.8	18.7
					5	31.0	34.5	31.0	3.4
Lower Pine	44	0.27	17.44	0.11	1	0.0	0.0	0.0	0.0
					2	0.0	0.0	0.0	0.0
					3	0.0	50.0	50.0	0.0
					4	16.7	46.7	13.3	23.4
					5	41.7	25.0	25.0	8.3
Burnt River	205	0.33	72.66	0.12	1	100	0.0	0.0	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	0.10	1	100.0	0.0	0.0	0.0
					2	50.0	50.0	0.0	0.0
					3	31.3	37.5	25.0	6.3
					4	10.7	71.4	3.6	14.3
					5	16.7	66.7	16.7	0.0
Upper Murray	154	0.86	32.18	0.18	1	100.0	0.0	0.0	0.0
					2	100.0	0.0	0.0	0.0
					3	54.5	27.3	13.6	4.5
					4	16.9	61.0	5.1	16.9
					5	52.4	11.1	25.4	11.1
Lower Wolverine	63	0.27	19.30	0.08	1	100.0	0.0	0.0	0.0
					2	75.0	25.0	0.0	0.0
					3	36.4	63.6	0.0	0.0
					4	31.0	40.5	4.8	23.8
					5	40.0	40.0	0.0	20.0
Upper Pine Residual	133	0.33	36.75	0.09	1	100.0	0.0	0.0	0.0
					2	55.6	33.3	11.1	0.0
					3	14.8	59.3	18.5	7.4
					4	29.5	51.1	10.2	9.1
					5	37.5	25.0	37.5	0.0
Johnson	49	0.23	5.23	0.02	1	0.0	0.0	0.0	0.0
					2	75.0	25.0	0.0	0.0
					3	38.5	61.5	0.0	0.0
					4	54.2	37.5	4.2	4.2
					5	25.0	75.0	0.0	0.0

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 2010 there was one action plan that was prepared for one crossing with a High – Medium WQCR. The road and crossing was graded in order to allow water to escape the road running surface and an exposed cut that was created during road construction was grass seeded.

In 2011 there were 15 crossings requiring actions plans. Four crossings were on roads that were in-block and deactivated. The action plans for those crossings was to seed with grass and in all cases seeding was completed that same fall. The other 11 crossing action plans all pertain to road maintenance. It was identified that road systems needed grading to re-establish the crown in the road to allow water to run off into the ditch way and in some circumstances the previous grading created a false ditch on the roadside that prevented water from reaching the actual ditch and therefore concentrated the water to flow along the side of the road system. All crossings have an action plan and therefore this indicator has been achieved.

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 2011. Currently 34 of 34 watersheds (100%) are meeting the PFI target. The projection for future development shows that one watershed, Medicine Woman, goes over the Max PFI target. 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 this watershed will be closely monitored such that the established target is not exceeded.

The information presented in this annual report forecasts disturbances and growth to 2013.

Table 16: Peak Flow Index Post Development Status

Watershed	H60 ELEV	Watershed ha	Current Development		Future Development		Max PFI
			ECA (ha)	PFI (%)	ECA (ha)	PFI (%)	
Adams Creek	1,107	5,462	0.3	0.0	24.5	0.4	43
Aylard Creek	1,036	5,460	28.5	0.5	41.4	0.8	37
Basin "862"	853	4,888	1,269.8	26.0	1,259.2	25.8	43
Beany Creek	958	3,902	4.4	0.1	10.9	0.3	37
Brazion Creek	1,220	32,398	2,187.4	6.8	2,678.6	8.3	37
Burnt Creek	1,185	62,207	3,158.6	5.1	4,206.4	6.8	37
Cameron Creek	783	3,615	155.3	4.3	220.3	6.1	50
Dunlevy Creek	1,047	17,020	709.8	4.2	996.5	5.9	31
Eleven Mile	1,326	21,621	660.5	3.1	1,374.8	6.4	43
Gaylard	1,029	15,650	1,973.7	12.6	3,232.9	20.7	31
Gething	996	18,519	1,741.8	9.4	2,971.5	16.0	31
Gwillim	1,066	4,520	374.9	8.3	1,239.6	27.4	43
Hasler Creek	1,077	19,025	2,533.8	13.3	5,662.0	29.8	37
Highat Creek	1,037	15,657	2,047.8	13.1	4,404.8	28.1	43
Johnson	891	21,169	3,916.0	18.5	2,678.7	12.7	37
Lebleu Creek	874	1,999	23.6	1.2	59.1	3.0	50
LeMoray Creek	1,291	11,199	521.8	4.7	521.8	4.7	37
Lower Carbon	1,057	13,178	1,192.3	9.0	1,727.2	13.1	50
Lower Murray	1,066	17,446	1,350.7	7.7	2,504.4	14.4	37
Lower Peace Reach	955	14,358	2,157.9	15.0	2,614.2	18.2	50
Lower Pine Residual	923	16,239	2,633.3	16.2	5,369.2	33.1	43
Lower Sukunka	904	54,320	5,269.2	9.7	8,081.4	14.9	43
Lower Wolverine	1,161	23,285	1,871.3	8.0	1,917.6	8.2	37
Medicine Woman Creek	975	1,881	46.5	2.5	733.8	39.0	35
Middle Wolverine	1,205	17,673	401.0	2.3	409.6	2.3	43
North Peace Residual	929	9,469	197.4	2.1	105.8	1.1	50
Ruddy Creek	922	6,450	93.5	1.5	96.9	1.5	31
Seven Mile	1,257	7,885	314.6	4.0	639.6	8.1	43
Trapper Creek	1,179	7,575	0.0	0.0	0.0	0.0	37
Upper Carbon	1,291	46,295	1,324.6	2.9	2,686.8	5.8	37
Upper Murray	1,294	17,868	2,713.6	15.2	2,709.5	15.2	37
Upper Pine Residual	1,082	40,178	3,939.4	9.8	7,615.5	19.0	37
Upper Sukunka	1,075	23,467	2,366.9	10.1	4,328.1	18.4	43
Upper Wolverine	1,378	18,042	1,407.2	7.8	1,349.6	7.5	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:

Currently there are no watershed reviews required. There are no watersheds where the PFI is currently exceeded. 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, such is the case with the Medicine Woman watershed, 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 any chemical or petroleum products into a riparian feature in 2011.

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 is in 2017.

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.

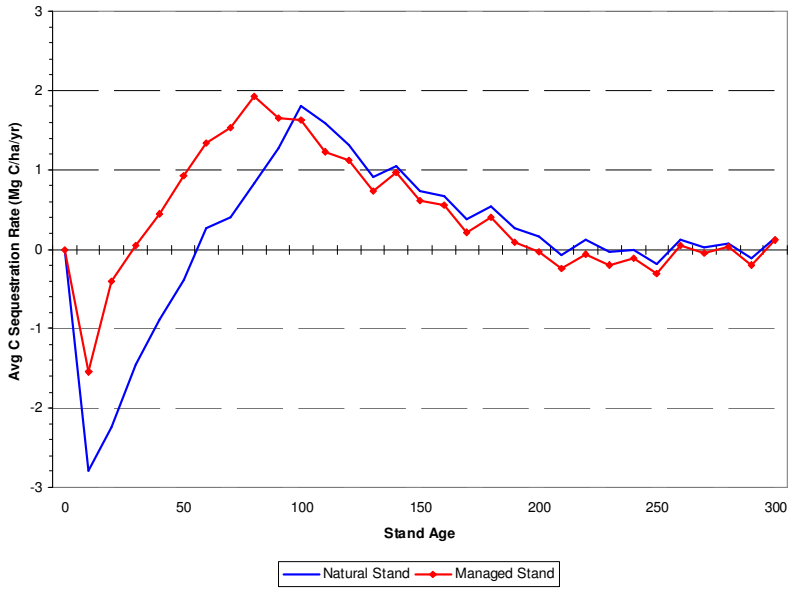


Figure 10: An Example of Average C Sequestration Rates for a Natural Spruce Leading BWBS Mesic Site Stand (Forecast AU 5) and an Associated Managed Stand (Forecast AU m^3)

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.

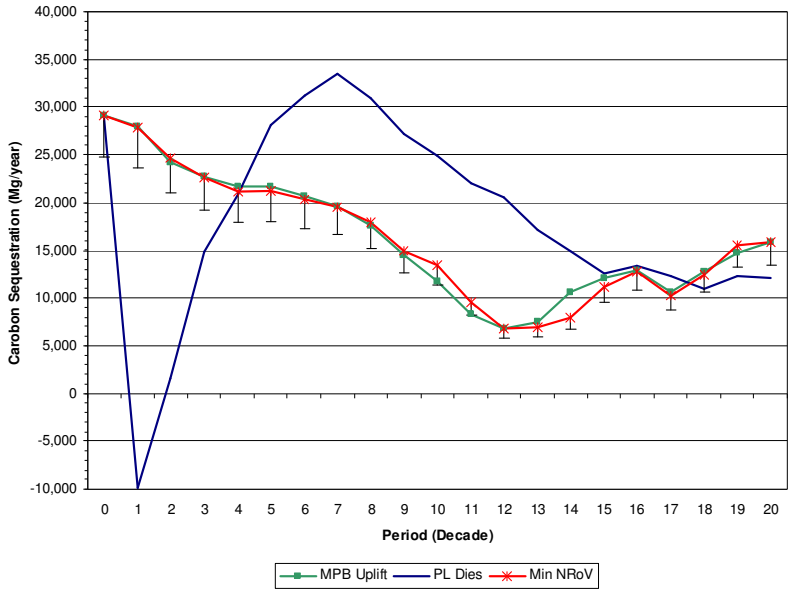


Figure 11: Carbon Sequestration (Mg C/year) within TFL 48 Over Time

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 is in 2017.

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.

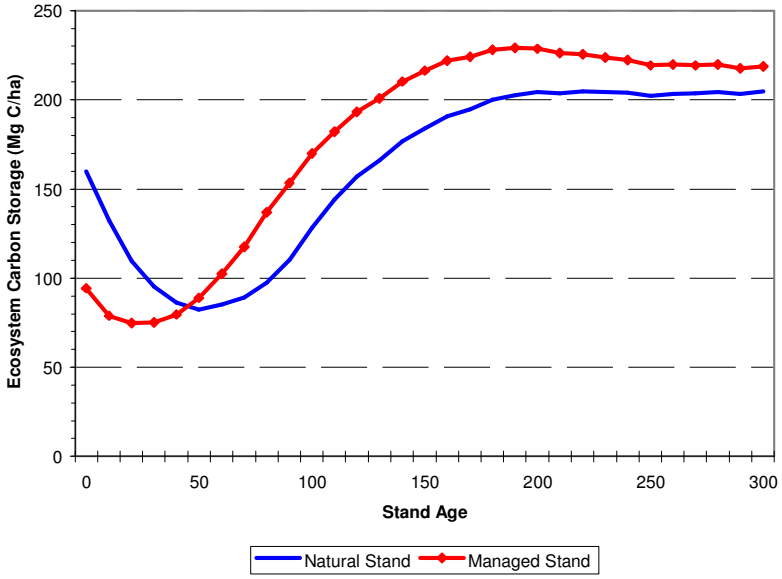


Figure 12: An Example of C Storage for a Natural Spruce Leading BWBS Mesic Site Stand (Forecast AU 5) and an Associated Managed Stand (Forecast AU m^3)

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.

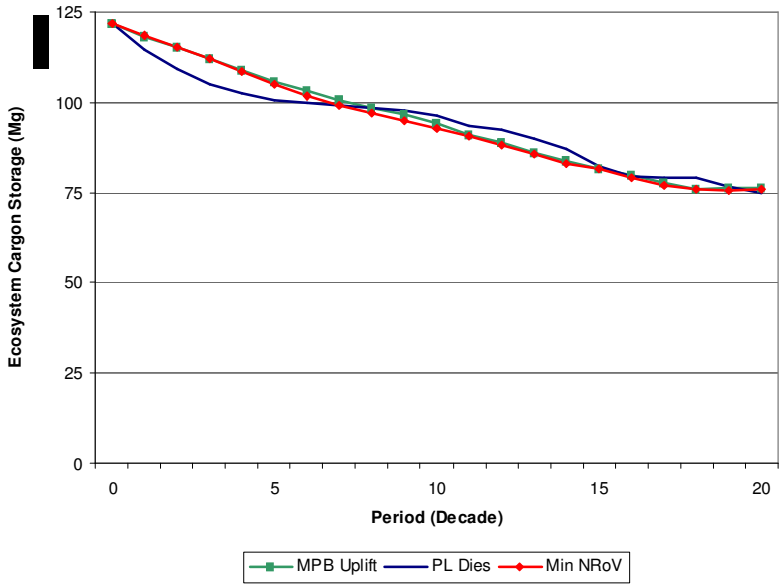


Figure 13: Total Ecosystem Carbon (Mg) Storage in the DFA Over Time

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
CSA Core Indicator(s): 5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA **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**
Annual minimum number of Animal Unit Months opportunity	We will maintain an annual minimum of 1500 Animal Unit Months (excludes brush control by sheep grazing)
Value(s): Timber and Non-Timber Multi-use Benefits, Strengthening and Diversifying Community Businesses and Business Opportunities	
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities. We will provide opportunities for local economic development.	

STATUS AND COMMENTS:

This indicator and target was not achieved in 2010. When examined, in 2010 there was a significant reduction to the number of Range Tenures issued compared to previous years when this indicator and target were achieved. To gain an understanding in the decline of issued tenures the Peace Forest District Range Agrologist was contacted. The underlying cause of declining tenures was largely due to poor calf returns. Coupled with recent failures/under

performing hay yields, many farmers sold off large portions of their cattle herds. In the 2010 Annual Report it was stated that if a trend of less than 1,500 AUMs continues that the Indicator and Target would be reviewed. For 2011 this indicator was once again below 1,500 AUMs and as such the target will be reviewed in 2012 for revision. The following table indicates the amount of grazing AUM's provided on TFL 48 in 2011.

Table 17: AUM's on TFL48 in 2011

Range Tenure	Total AUMs	TFL Proportion (%)	TFL AUM's
RAN077560	660	40.5	267
RAN073263	104	1.2	1
RAN073616	366	26.5	97
RAN073876	767	34.9	268
RAN074239	51	100.0	51
RAN074307	356	39.8	142
RAN075557	177	0.1	0
RAN075680	111	87.9	98
RAN076149	157	2.8	4
RAN076313	170	.04	0
RAN076505	118	9.9	12
RAN076672	699	58.7	410
Total			**1,350**

REVISIONS:

In 2011 the PAC and licencees were in agreement that the target statement as written and reported out on is determined by factors outside of the licencees control. In other words, the licencees practices do not influence the outcome or achievement/non-achievement of this target. The target statement will be reviewed in 2012 with the PAC and revised such that the licencees can affect the outcome of AUMs based on forest management practices.

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 area completed with conventional ground based methods by 5 year cut control period	A maximum of 84% of the coniferous harvesting area (ha) will be completed with conventional ground based methods by 5 year cut control period
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.	

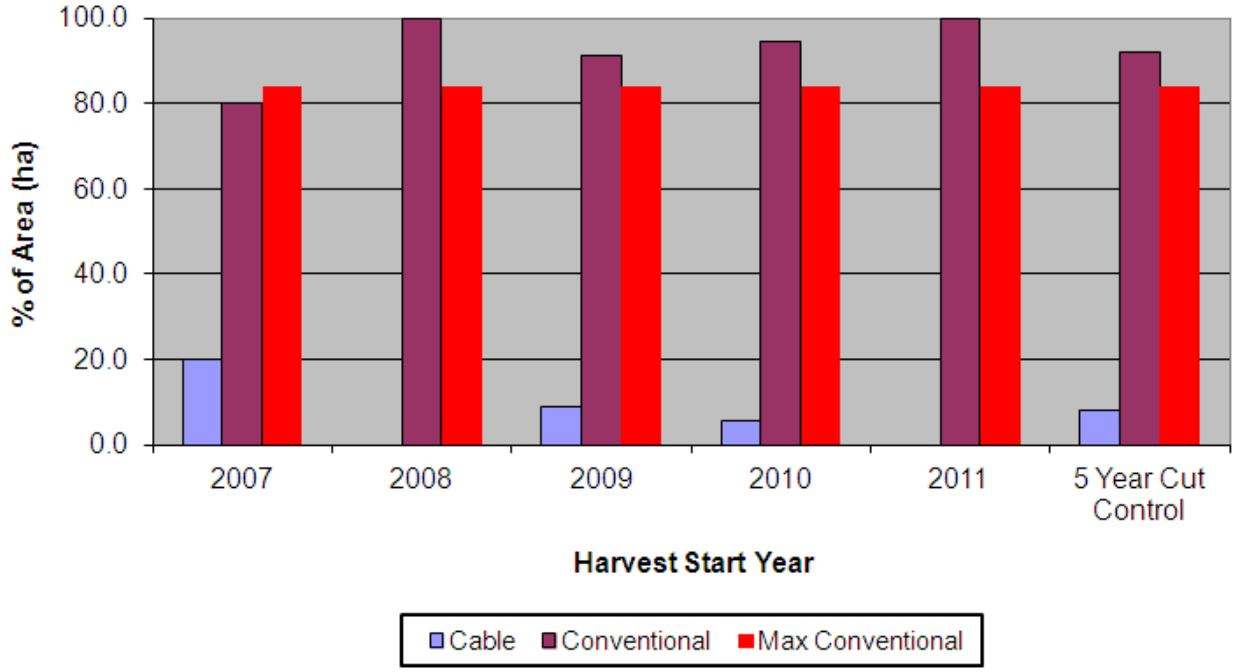
STATUS AND COMMENTS:

The following Figure 14 shows the history of the harvesting program over the cut control period 2007 – 2011. At the end of December 2011, over the 5 year period, 92% of area harvested used a conventional system with the remaining 8% utilizing the cable system. The indicator

target was not achieved. Lumber market conditions have a direct affect on the pricing of forested stands. With poor market pricing the harvesting of stands using the cable system would result 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 Licencees which have made these stands un-economical to harvest.

As market conditions improve, and forest licencees 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 attractable to harvest using the cable system. In order to achieve this target over the next 5 year cut control period the licencee is developing a strategy to have 100,000m^3 of volume available to harvest for the cable operation on an annual basis.

Figure 14: Proportion of Conventional Harvest Systems Used 2007-2011



REVISIONS:

No revisions are suggested for this indicator or objective.

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:

In 2011 there were 8 blocks that were harvested within areas requiring visual quality objectives. These blocks were consistent with the VQOs.

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, Bocock, 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 2011 there was no harvesting or road construction in or adjacent to any of the backcountry areas. In 2015 the inventory data will be updated.

The baseline (2001) and current (2005) recreational opportunity spectrum for the stated Backcountry areas are shown on the following tables (Table 18 and Table).

Table 18: Baseline Condition – ROS Inventory

Back Country Area	ROS Class Baseline Condition – (2001)							
	Roaded			Roaded Total	Semi Primitive		Semi Primitive Total	Grand 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 2005

Back Country Area	ROS Class (2005))							
	Roaded			Roaded Total	Semi Primitive		Semi Primitive Total	Grand 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. 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 2011 the campsites and trail were in very good condition. The Gething campsite required some brushing of grass in the campsites as well as removal of blown down trees.

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 2011 there was one agreement with a Range tenure holder. To date all of the commitments contained within the agreement have been fulfilled.

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:

In 2011 there were a total of 41 blocks harvested. Of the 41 blocks, 14 blocks fell under scale based stumpage where waste benchmarks still apply. The blocks that were surveyed were below waste benchmarks and those that were not surveyed will be in snow free conditions in 2012. The remaining 27 blocks are not subject to waste assessments as they were either under cruise based stumpage or tabular rate stumpage which requires the licencee to pay for all of the volume of timber that is within the stand.

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 2011 there were no major detections of forest health issues relative to managed stands. There was a total of 41 hectares that were fill planted for a total of 27,615 trees and a total of 898 hectares of reforested area that was brushed to remove competing vegetation on Canfor managed stands.

In 2011 the ongoing Mountain Pine Beetle (MPB) infestation was the only significant forest health agent that occurred within the DFA.

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 m^3 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 on the TFL.

The 2011 projection is based on the assumption that 70% of stands with >60% pine composition have been affected by MPB. This area totals 33,803 ha. The corresponding volume is determined by multiplying the default volume per ha of 275. The assumption is based on aerial flights and field observations on the spread and extent of the MPB.

Table 20: Summary of Forest Health Issues 2000-2011

Factor	2011 Volume (m^3)	2011 Area (ha)	2000-2011 Volume (m^3)	2000-2011 Area (ha)	2011 Comments
Blow Down	0	0	10,665	38.8	Derived area from volume /275.
Mountain Pine Beetle	1,844,275	6,706	9,295,825	33,803	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 2011 there was only one directive regarding forest health and it is in regard to the harvest of MPB stands.

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. Deliveries from TFL 48 through 2011 were 70% pine being delivered (see Indicator 22).

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:

Due to continued poor market conditions there was no monetary funding made available to the Canfor Chetwynd Division for donations. In 2012 funding has been secured such that this indicator can be met for the 2012 reporting period.

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:

See

Figure 15 for current status of this indicator. In 2011, not including stumpage, Canfor paid $27.5MM to all vendors. Local vendors or contractors were paid $22.9MM or 83% of total expenditures. The five-year rolling average from 2007 through 2011 saw 84% of expenditures made to local vendors or contractors.

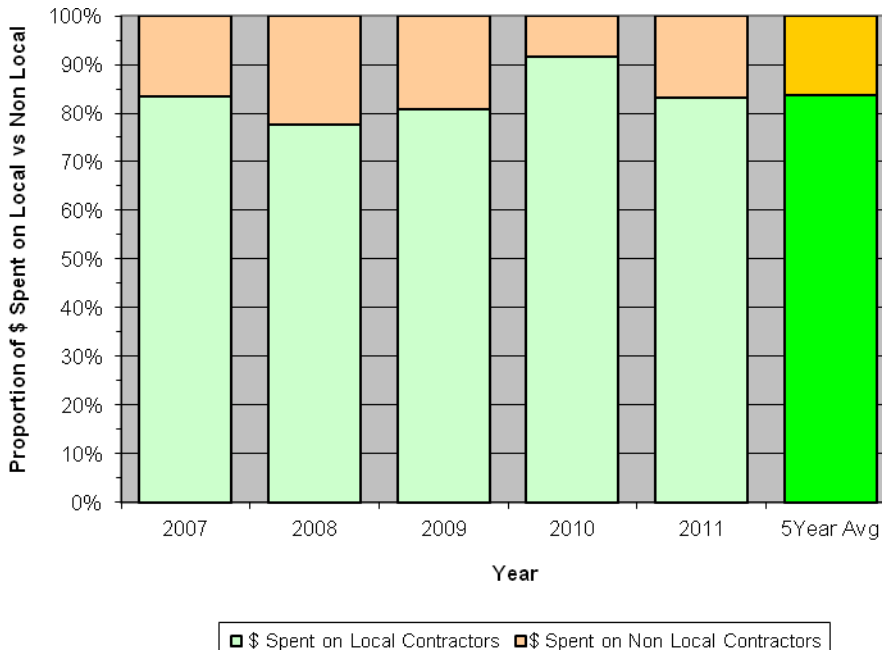


Figure 15: Proportion of Dollars Spent on Local vs Non-Local Contractors

REVISIONS:

No revisions are suggested for this indicator or objective.

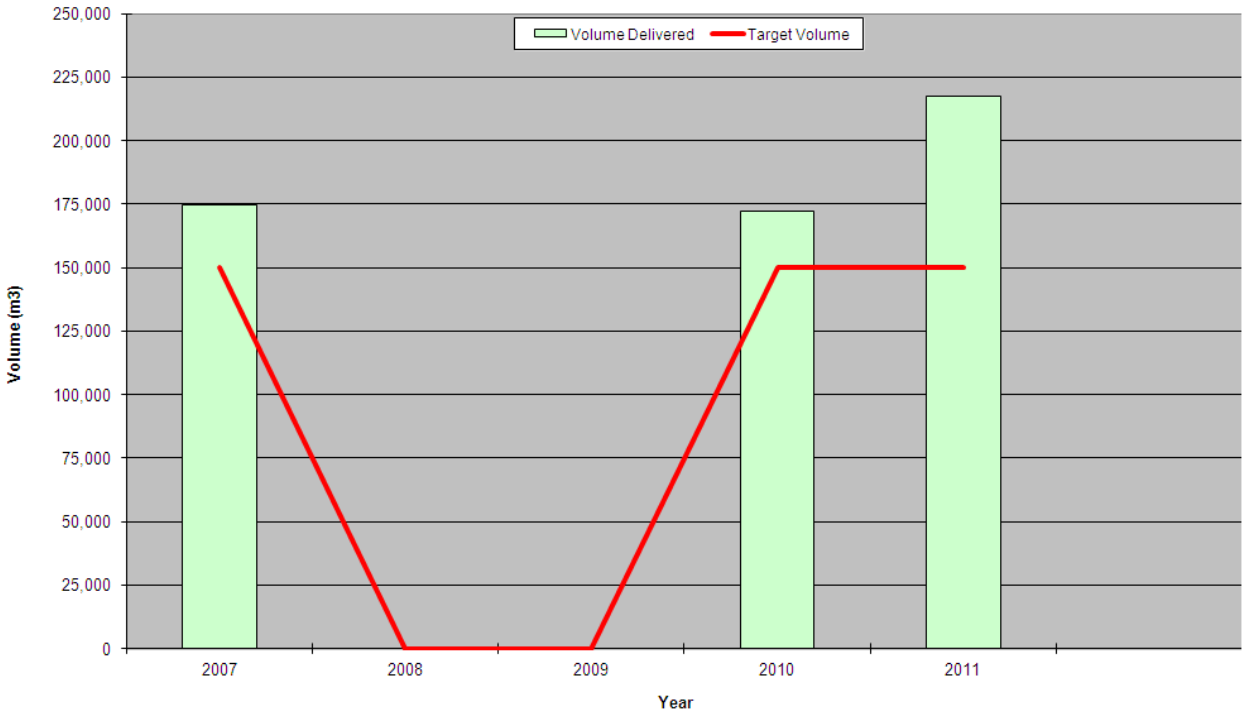
2.46 SUMMER AND FALL DELIVERIES

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. In 2011 there was no significant downtime to mill operations.

Figure 16: 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 BCTS staff were trained according to their training requirements. A number of Canfor staff did not complete or partake in all of the necessary training that was required of their job position as outlined in the company's training plan. Canfor completed 95% of the required training which is within the 5% tolerance and as such, this indicator was achieved in 2011.

REVISIONS:

No revisions are suggested for this indicator or objective.

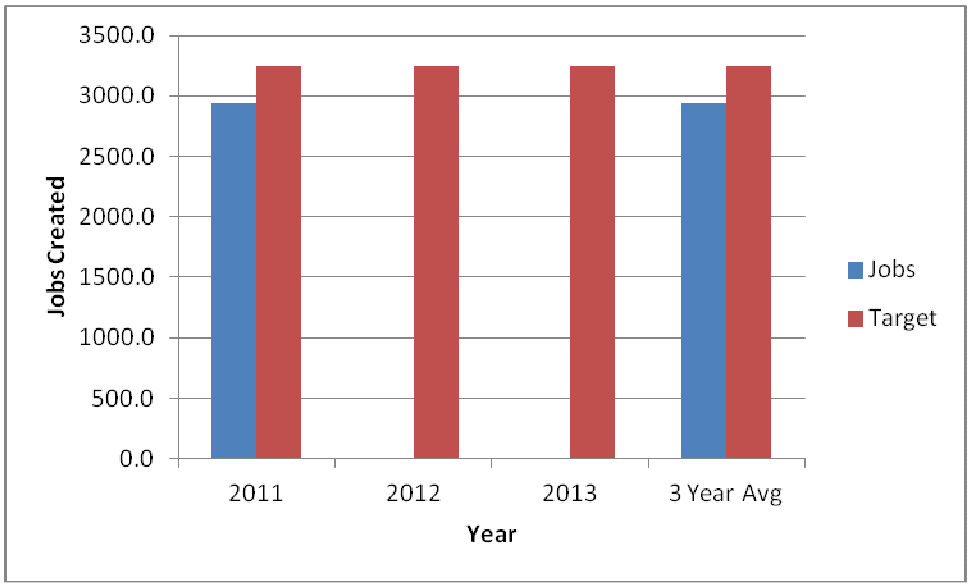
2.48 LEVEL OF DIRECT AND INDIRECT EMPLOYMENT

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:

In 2011 the number of direct and indirect jobs created by the harvesting of timber from the TFL was 2,943. This is the first year this indicator has been reported on. Target employment is achieved when 100% of the volume available in the Annual Allowable Cut (AAC) is harvested. Achievement of indicator is based on the harvest performance in a 3 year period therefore achievement will not be verified until the 2013 Annual Report. 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 2011 there were 9 opportunities for First Nations to be involved in the forest economy. There were 4 timber sale licences that were offered to the public by BCTS. BCTS also provided 1 multiphase (cutblock development) contract, 2 survey contracts, 2 planting contracts, and 1 road maintenance project up for competitive bid for a total of 8 opportunities. Canfor holds a joint forest licence with a local First Nations band which provides opportunity for harvesting.

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:

In 2011, 100% of staff that are employed by the Chetwynd Division received First Nations awareness training. All BCTS staff received First Nations training as well.

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:

Management Plans consulted on included (1) the development of a new PMP which is a 5 year plan that documents the processes and procedures used in reforestation vegetation control; (2) the Annual Operating Plan which identifies proposed harvest cutblocks for both Canfor and BCTS, and (3) the Notification of Intent to Treat (NIT) which lists the reforested areas that are scheduled for vegetative control utilizing herbicides.

The SFMP Plan that was revised over the course of 2011 in order to align the plan with the requirements of the 2008 CSA Standard was available for review at the PAC meetings. Two of the four First Nation communities actively participated in the development of the new SFMP while no comments were received from the remaining two bands.

REVISIONS:

No revisions are suggested for this indicator or objective.

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 2011 there were 5 products (lumber, trim blocks, chips, white wood, and hog) 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:

In 2011 Canfor conducted an internal audit on their Occupational Health & Safety system as required by the BC Forest Safety Council for maintaining the companies Safe Companies Certificate. The audit result was 96% which is an indication of Canfor's commitment to the

health and well-being of its employees. BCTS conducted their annual surveillance audit and scored 90% which maintains their SAFE Company certification as well.

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 program.

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:

There were 3 PAC meetings held over 2011. The first meeting which occurred in February was the meeting where the PAC endorsed the use and content of the survey in meeting the CSA Core Indicator. The May PAC meeting continued the groups progress in transitioning the SFMP from the 02 CSA Standard to the 08 Standard. At this point in time, 2011 was going to be reported on to the 02 CSA Standard. It was not until after the May PAC meeting was it discovered that 2011 would be managed to the 08 Standard. As such, only the August PAC meeting was the survey provided to the PAC members for input into the groups satisfaction with the process. The results of the survey was 90% satisfaction.

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	
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:

- There were three PAC meetings held in 2011. Two of the meetings were conducted to review the SFM Plan and revise it to be compliant with the CSA Z809-08 Standard. The final meeting held in August was to review the highlights of the final SFM Plan as well as the 2010 performance as contained in the 2010 Annual report.

Table 22: Public Advisory Committee Meetings

Year	Number of PAC Meetings
2007	1 (+ 1 field trip)
2008	1
2009	1
2010	1
2011	3

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 TOR was reviewed and updated with the PAC on August 25, 2011. The next required review for acceptance of the PAC will be in 2013.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.57 EDUCATIONAL OPPPORTUNITIES

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:

In 2011 there were 2 activities that were conducted to promote the awareness of forestry to the general public.

In August Canfor participated in a multi-licencee silviculture forum open to the public that was held at a local First Nations community hall. The forum looked at the various silviculture practices employed by the licencees. Recommendations regarding the sharing/exchange of information and program implementation were also identified.

In October Canfor participated in an annual event sponsored by COFI (Council of Forest Industries) that seeks to educate local grade schools with regard to forest management. Canfor's silviculture forester presented and conducted training on various aspects of forestry duties such as navigation (map reading and compassing).

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 inquires	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 2011 there were two public inquiries pertaining to operations on the TFL, both of which were submitted by the same individual. The citizen was concerned that mimicking natural disturbance regimes and the implementation of the Natural Disturbance Unit management strategy was detrimental to the environment. Individual was opposed to the exemption granted by government to the Licencee for the maximum cut-block size requirement of 60 hectares. Citizen also expressed interest regarding the cumulative impacts of all the various industries on the landscape. They inquired as to whether or not there was coordination between industries to minimize the effect of cumulative impacts on the environment.

The primary concerns that were identified in the second inquiry included representation of interest groups on the PAC; available wildlife habitat; as well as the re-statement of some of the concerns outlined in the first inquiry.

Canfor responded to these questions and concerns within 30 days of receipt of the letters from the individual.

Also in 2011 Canfor operations were audited by an internal contractor as well as by an independent 3rd party auditor. The internal audit consisted of a review of Canfor's documents to ensure compliance with the CSA Standard, there were no findings identified related to major or minor non-compliance or non-conformance. The external auditor, KPMG, provides a report of Canfor operations based on audit findings which is posted to Canfor's external website.

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 will be circulated to members of the PAC.

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
MoFR	Ministry of Forests and Range
NIT	Notification of Intent to Treat
NDU	Natural Disturbance Units
NVAF	Net Volume Adjustment Factor
OSB	Oriented Strand Board
PAC	• 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