SUSTAINABLE FOREST MANAGEMENT PLAN 4

2010 ANNUAL REPORT

TFL 48

Canadian Forest Products Ltd.
Chetwynd Division
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2010 ANNUAL REPORT

Canadian Forest Products Ltd.

Chetwynd Operations — TFL 48

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EXECUTIVE SUMMARY

As shown in the following Table 1, of the 54 Indicators 4 were not reportable for 2010. Of the remaining 50 indicators, 48 or 96% met the targets while in 2 instances (4%) of the targets were not met.

Table 1: Summary of 2010 Performance

Indicator	Target			
	Met	Not Met	Not Reported (Next Date for Reporting)	Recommend Reporting be Suspended
2.1 Ecosystem Representation	✓			
2.2 Forest Types	✓			
2.3 Late Seral Forest	✓			
2.4 Patch Size Distribution	✓			
2.5 Snags/Live Tree Retention	✓			
2.6 Coarse Woody Debris	✓			
2.7 Average Minimum Width of RRZ and RMZ	✓			
2.8 Shrubs/Early Forest	✓			
2.9 Wildlife Tree Patches	✓			
2.10 Habitat Supply for Species of Public Concern			TSR - unknown	
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 Wildlife Habitat Areas, Ungulate Winter Ranges and Dunlevy Creek Management Plan	✓			
2.16 Forest Health	✓			
2.17 Proportion of Completed Forest Health Action Plans	✓			
2.18 Regeneration Declaration	✓			
2.19 Free Growing Stands	✓			
2.20 Permanent Access Corridors			2015	
2.21 Site Index	✓			
2.22 AAC	✓			
2.23 Soil Degradation	✓			
2.24 Soil Disturbance Surveys	✓			
2.25 Use of Environmentally Friendly Lubricants				
2.26 Spills Entering Water Bodies	✓			
2.27 Stream Crossing Quality Index	✓			
2.28 Action Plans for High Water Quality Concern Rating (WQCR)	✓			
2.29 Peak Flow Index	✓			
2.30 Watershed Reviews	✓			
2.31 Carbon Sequestration			TSR - unknown	
2.32 Ecosystem Carbon Storage (Mg) in the DFA			TSR - unknown	
2.33 Area of Forested Land	✓			
2.34 Range Opportunities		✓		
2.35 Maintenance of Visual Landscape Inventory	✓			
2.36 Proportion of Harvesting Consistent with Visual Quality Objective	✓			
2.37 Back Country Condition	✓			
2.38 Recreational Sites	✓			

Indicator	Target			
	Met	Not Met	Not Reported (Next Date for Reporting)	Recommend Reporting be Suspended
2.39 Harvest Levels/Volumes	✓			
2.40 Waste	✓			
2.41 Harvest Method	✓			
2.42 Summer and Fall Deliveries	✓			
2.43 Local Employment	✓			
2.44 Community Donations		✓		
2.45 Consistency With Third Party Action Plans	✓			
2.46 Known Values and Uses Addressed in Operational Planning	✓			
2.47 Conformance to Elements Pertinent to Treaty Rights	✓			
2.48 LRMP Implementation Meetings Attended by Canfor	✓			
2.49 Public Advisory Committee	✓			
2.50 Public Advisory Committee Terms of Reference	✓			
2.51 Response to Public Inquiries	✓			
2.52 Distribution/Access to SFM Plan, Annual Reports and Audit Results	✓			
2.53 Spatial Forecasting and Analysis	✓			
2.54 Currency of Vegetation Resource Inventory	✓			

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 August 25, 2011.

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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, and re-registration in 2002. In 2005 the Sustainable Forest Management Plan 4 was updated to the CAN/CSA Z809-02 Sustainable Forest Management: Requirements and Guidance. In partial fulfillment of achieving registration, 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. The 2009 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. The 2010 Annual Report is the eleventh time annual reporting has been undertaken for SFMP's and the sixth report for SFMP 4.

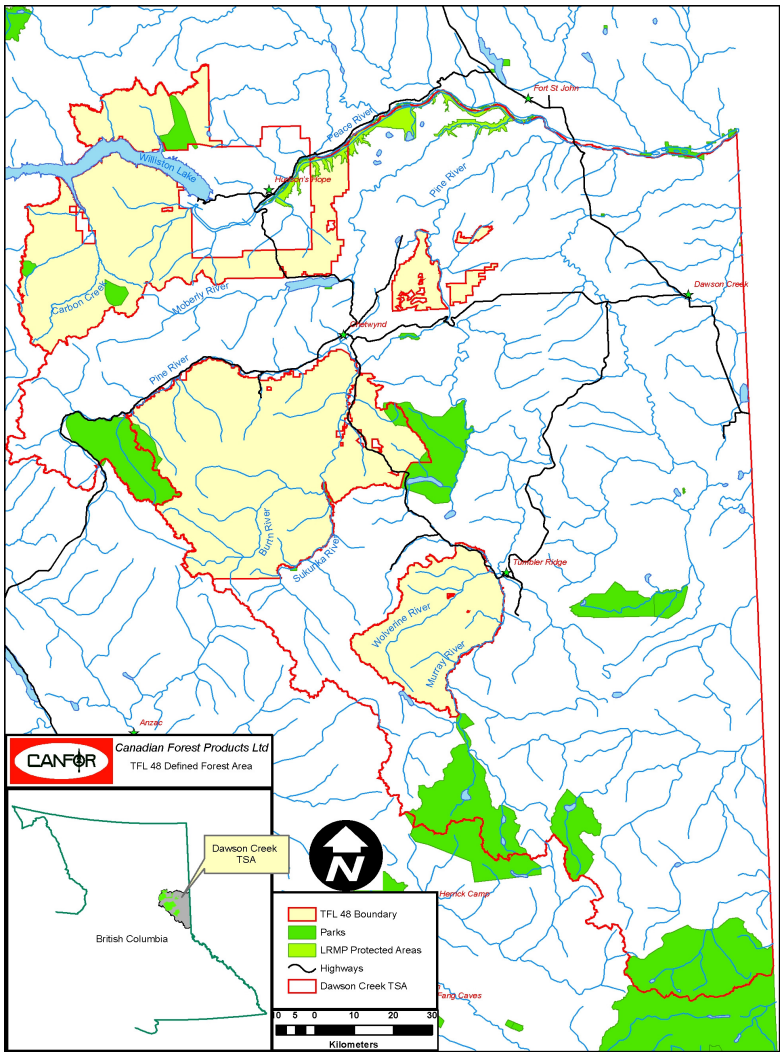

Figure 1: Tree Farm Licence 48

This report is prepared as an annual report required by the CSA standard and also serves as a TFL Annual Report. 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 for Tree Farm Licence 48 (Canfor, 2006).

The Public Advisory Committee reviewed this report on August 25, 2011.

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 noted as SBFEP was collected and provided by BC Timber Sales staff at the Dawson Creek office of the Peace Forest District. Canfor then included this information into applicable indicator reporting. Information provided by Tembec for harvesting, road construction and silviculture activity was included into the applicable indicators.

1.2 SIGNIFICANT CHANGES

A significant development in the management of TFL 48 is that on December 16, 2009, Canfor announced that its sawmill in Chetwynd will re-open in the spring of 2010 following mill upgrades worth approximately $16 million Canadian. Since Chetwynd is the main destination of logs from TFL 48, operations will return at a capacity that fulfills the mills timber requirements.

2 SFM INDICATORS AND OBJECTIVES

2.1 ECOSYSTEM REPRESENTATION

Indicator Statement	Target Statement
Proportion of rare ecosystem groups (3, 6, 7, 10, 21) reserved from harvest	100% of rare ecosystems reserved from harvest
SFM Objective: We will conserve or restore ecosystem diversity within the natural range of variation within DFA over time. We will conserve genetic diversity of both wildlife and plant species.	

STATUS AND COMMENTS:

Blocks are assessed annually as layout is completed to determine the presence of rare ecosystems. There were fourteen blocks laid out for Canadian Forest Products Ltd. and two for BCTS over the 2010 field season. Four blocks showed the potential of rare ecosystems on the block perimeter and only one block contained verified rare ecosystems which were reserved from harvest within Wildlife Tree Patches.

REVISIONS:

This indicator will no longer sample blocks that have been laid out over the fiscal year, instead it will look at blocks with harvested completed within the same time frame. The change in sample criteria is to standardize the information that is required for reporting purposes between various indicators.

2.2 FOREST TYPES

Indicator Statement	Target Statement
Percent distribution of forest type (deciduous, deciduous mixed wood, conifer mixed wood, 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%)
SFM Objective: We will conserve or restore ecosystem diversity within the natural range of variation within the DFA over time. 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 sustain the natural range of ecosystem productivity to support naturally occurring species.	

STATUS AND COMMENTS:

The following Table 2 shows the forest type distribution for the TFL. The forested stands that are used in the analysis are those stands that are 20 years of age or older. Younger stands are not included as they vary too greatly in species composition over short periods of time. As stands mature the species begin to show a dominance as one of the four forest types below. This annual report marks a milestone for this indicator as this is the first analysis that includes stands that have been harvested on the TFL. The next time this indicator will be reported on will be in the 2016 Annual Report.

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

Forest Type	Area by Forest Type					Target Range
	MP 3 %[1]	2005	%	2010	%	
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.

2.3 LATE SERAL FOREST

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 (SFMP 4 Table 11)
SFM Objective: We will conserve or restore ecosystem diversity within the natural range of variation within DFA over time. We will conserve genetic diversity of both wildlife and plant species.	

STATUS AND COMMENTS:

For this annual report the current ha is based on development projected to 2011 and the projected ages to 2013. Two conifer NDUs are currently not meeting their targets (Omineca – Mountain and Wet Mountain), however, the deficiency of mature forested stands was identified when this indicator was first developed. The deficiency of mature is a natural cause. No harvesting has occurred over the past few years nor are there any proposed blocks in these two units. Both units are increasing in the amount of mature forest and there is a sufficient amount of younger stands to achieve the targets within the acceptable time frames as indicated in the SFM Plan. Given that the targets are projected to be achieved within the tolerated time frames, this indicator will be reported out as having met the Indicator Target.

The following provides a summary of the results:

NDU/BEC Targets – All targets are met for the Boreal Plains and Boreal Foothills – Valley Deciduous units (See Table 3).

Boreal Plains Conifer (See Table 4) – Targets are met at the BEC variant level and NDU level.

Boreal Foothills – Valley – Conifer – Targets are met at the BEC variant level and at the NDU level.

[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.

Boreal Foothills – Mountain – Targets are met at the BEC variant level and at the NDU level.
Omineca – Valley – Targets are met at the BEC variant and NDU level for this unit.

Omineca – Mountain – Targets are met at the BEC variant level but not at the NDU level. Compared to 2009 the deficit in the amount of late seral has decreased as there has not been any harvest activities conducted or planned in these units.

Wet Mountain – Targets are met at the BEC variant level but not at the NDU level. There has been a decrease in the deficit from 17,301 ha to 12,568 ha. This large decrease in the deficit is partly due to eliminating the previously proposed harvesting. The proposed areas have not been included in this analysis because they are not pine leading blocks and as such do not fit the harvest profile for the DFA.

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	141+ 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	2,739	7%	2,791	8%	14,957	41%	14,288	39%	19,041	52%	15,367	19,646	53%	15,974	36,737	10%	
	BWBSwk 1	66	2%	75	2%	2,124	54%	1,899	48%	1,773	44%	1,377	1,986	50%	1,590	3,963	10%	
	ESSFmv 2	12	3%	11	2%	318	70%	188	42%	121	27%	76	252	56%	207	451	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		2,817	7%	2,877	7%	17,410	42%	16,386	40%	20,964	51%	16,845	21,913	53%	17,795	41,191	10%	0
Boreal Foothills - Valley - Deciduous	BWBSmw 1	2,408	11%	2,387	11%	6,845	32%	6,196	29%	12,276	57%	10,123	12,936	56%	10,784	21,529	10%	
	BWBSwk 1	26	2%	26	2%	914	64%	907	63%	493	34%	350	501	35%	358	1,433	10%	
	BWBSwk 2	270	5%	270	5%	1,368	28%	1,331	27%	3,323	67%	2,827	3,361	68%	2,865	4,961	10%	
	SBS wk 2	356	4%	428	5%	3,296	40%	2,813	34%	4,692	56%	3,858	5,097	61%	4,263	8,344	10%	
Boreal Foothills - Valley - Deciduous Total		3,060	9%	3,111	9%	12,423	34%	11,247	31%	20,784	57%	17,158	21,895	60%	18,269	36,267	10%	0
Grand Total		5,877	7%	5,988	8%	29,842	39%	27,633	35%	41,748	54%		43,808	57%		77,458		

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	8,512	26%	9,333	28%	6,418	19%	6,190	19%	10,396	31%	9,763	30%	7,733	23%	6,080	7,761	23%	6,109	33,059	5%	
	BWBSwk 1	2,939	12%	4,382	18%	3,889	16%	3,405	14%	10,134	43%	8,956	38%	6,786	29%	5,599	6,993	30%	5,806	23,748	5%	
	ESSFmv 2	449	3%	887	7%	1,155	9%	548	4%	5,838	45%	5,307	41%	5,505	43%	4,858	6,204	48%	5,557	12,947	5%	
	SBS wk 2	0	0%	0	0%	178	89%	178	89%	5	3%	5	3%	18	9%	N/A	18	9%	N/A	201	N/A	
Boreal Plains - Conifer Total		11,900	17%	14,602	21%	11,640	16%	10,321	15%	26,373	38%	24,031	34%	20,042	29%	8,150	20,976	30%	9,088	69,955	17%	20
Boreal Foothills - Valley - Conifer	BWBSmw 1	5,542	17%	6,159	19%	5,484	17%	5,086	16%	8,610	27%	8,366	26%	12,502	39%	10,252	12,492	39%	10,245	32,138	7%	
	BWBSwk 1	967	18%	966	18%	1,074	20%	1,075	20%	1,069	20%	907	17%	2,285	42%	1,907	2,446	45%	2,068	5,395	7%	
	BWBSwk 2	808	10%	808	10%	2,476	33%	2,476	33%	2,762	37%	2,759	37%	1,496	20%	968	1,493	20%	965	7,542	7%	
	SBS wk 2	15,498	19%	21,828	27%	10,597	13%	8,647	10%	24,034	29%	20,410	25%	32,285	39%	26,516	31,477	38%	25,712	82,414	7%	
Boreal Foothills - Valley - Conifer Total		22,815	18%	29,761	23%	19,631	15%	17,284	14%	36,475	29%	32,442	25%	48,568	38%	19,246	47,908	38%	19,267	127,489	23%	10
Boreal Foothills - Mountain	ESSFmv 2	9,097	9%	10,464	10%	15,593	15%	15,053	14%	27,229	26%	25,152	24%	53,898	51%	43,316	55,138	52%	44,557	105,817	10%	
	ESSFmv 4	750	7%	750	7%	3,978	34%	3,977	34%	4,138	35%	4,129	35%	2,833	24%	1,663	2,838	24%	1,669	11,699	10%	
	ESSFwc 3	1,031	4%	815	3%	3,709	15%	3,400	14%	9,176	38%	8,168	34%	10,553	43%	8,106	12,086	49%	9,639	24,469	10%	
	ESSFwk 2	3,491	13%	4,777	18%	3,439	13%	3,260	12%	10,000	38%	8,302	32%	9,312	36%	6,688	9,893	38%	7,270	26,242	10%	
Boreal Foothills - Mountain Total		14,369	8%	16,806	10%	28,719	17%	25,690	15%	50,543	30%	45,721	27%	75,596	45%	20,081	79,955	48%	24,440	168,227	33%	10
Omineca - Valley	BWBSmw 1		0%		0%	10	36%	10	36%	17	64%	17	64%		0%	N/A		0%	N/A	27	N/A	
	SBS wk 2	672	11%	672	11%	189	3%	178	3%	2,655	43%	2,494	40%	2,656	43%	2,224	2,828	46%	2,396	6,172	7%	
Omineca - Valley Total		672	11%	672	11%	199	3%	188	3%	2,672	43%	2,511	40%	2,656	43%	1,230	2,828	46%	1,402	6,199	23%	0
Omineca - Mountain	ESSFmv 2	806	6%	974	7%	692	5%	624	5%	4,769	37%	4,540	35%	6,850	52%	4,620	6,973	53%	4,744	13,117	17%	
Omineca - Mountain Total		806	6%	974	7%	692	5%	624	5%	4,769	37%	4,540	35%	6,850	52%	(758)	6,973	53%	(631)	13,117	58%	40
Wet Mountain	ESSFmv 2	331	2%	331	2%	2,645	16%	2,469	15%	2,656	16%	2,750	17%	10,630	66%	6,565	10,708	66%	6,644	16,262	25%	
	ESSFwc 3	419	1%	570	2%	2,764	8%	2,362	7%	5,707	18%	5,155	16%	23,446	73%	15,362	24,249	75%	16,165	32,336	25%	
	ESSFwk 2	3,484	13%	3,613	14%	786	3%	717	3%	2,829	11%	2,343	9%	19,024	73%	12,493	19,439	74%	12,911	26,123	25%	
	SBS wk 2	2,241	19%	2,241	19%	972	9%	853	7%	3,233	28%	2,965	26%	5,113	44%	2,223	5,491	48%	2,604	11,559	25%	
Wet Mountain Total		6,475	8%	6,755	8%	7,167	8%	6,401	7%	14,425	17%	13,213	15%	58,213	67%	(14,262)	59,887	70%	(12,568)	86,280	84%	80
Grand Total		57,037	12%	69,570	15%	68,048	14%	60,508	13%	135,257	29%	122,458	26%	211,925	45%		218,527	46%		471,267		

Source: VRI – 2004 and Planned and Laid out harvest areas

2.4 PATCH SIZE DISTRIBUTION

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 SFMP 4 Table 14
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	1,880	12%	1,633	9%	784	5%	1,024	6%	<15%	12,698	83%	5,470	81%	>50%	15,362	18,127
Boreal Foothills/Omineca	6,209	14%	5,038	10%	6,840	16%	5,502	10%	<20%	30,612	70%	42,213	80%	>40%	43,661	52,753
Wet Mountain	1,286	19%	1,278	18%	1,509	22%	1,509	22%	<25%	4,147	60%	4,147	60%	<60%	6,942	6,934
Grand Total	9,375	14%	7,949	10%	9,133	14%	8,035	10%		47,457	72%	61,830	79%		65,965	77,814

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	8,798	12%	4,268	6%	58,098	82%	>70%	71,164	50%	>30%
	Projected	8,753	13%	4,633	7%	56,452	81%	>70%	69,838	50%	>30%
Boreal Foothills/Omineca	Current	18,216	7%	7,690	3%	235,100	90%	>80%	261,006	58%	>35%
	Projected	18,252	7%	8,614	3%	226,937	89%	>80%	253,803	58%	>35%
Wet Mountain	Current	2,390	3%	501	1%	74,511	96%	>85%	77,402	61%	>60%
	Projected	2,379	3%	368	0%	75,459	96%	>85%	78,206	62%	>60%

REVISIONS:

No revisions are suggested for this indicator or objective.

2.5 SNAGS/LIVE TREE RETENTION

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
SFM Objective: We will sustain sufficient and appropriately distributed suitable habitat elements to maintain native species richness. 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:

In 2010 there were 26 blocks with harvest start dates in 2010. Within these blocks there was a total of 1,063ha of area that were subject to snag/live tree retention. A total of 1,559ha was prescribed to have snag/live tree retention. Overall retention targets were achieved.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.6 COARSE 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
SFM Objective: We will sustain sufficient and appropriately distributed suitable habitat elements to maintain native species richness. 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:

Currently 11 of 23 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.

2.7 AVERAGE MINIMUM WIDTH OF RRZ AND RMZ

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

SFM Objective:
To have representative areas of naturally occurring and important ecosystems, and rare physical environments protected at both the broad and site specific levels across or adjacent to the DFA
We will maintain water quality and quantity.

STATUS AND COMMENTS:

The following table (Table 7) shows the summary of riparian reserve and management zones for 2010 as well as the cumulative average from 2000 to 2010. The targets have been met in 2010 and all previous years. It should be noted that where the minimum riparian management Zone (RMZ) is not met this is due to more area being contained within the reserve zone (RRZ).

Table 7: Summary of Riparian Reserve and Management Zones in 2000 – 2010

Year	Stream, Wetland or Lake Class	Total Stream Length (m)[b]	RRZ – Required Width (m)[c]	RRZ–Actual Width (m)[c]	RMZ Required Width (m)[c]	RMZ – Actual Width (m)[c]	Total RMA Required (m)	Actual (m)
2010	S1 (n=0)	-	50	-	20	-	0	-
	S2 (n=4)	-	30	-	20	-	50	-
	S3 (n=0)	-	20	-	20	-	40	-
	S4 (n=0)	-	0	-	30	-	30	-
	S5 (n=0)	-	0	-	30	-	30	-
	S6 (n=12)	**15,853**	0	-	20	28.5	20	28.5
	W3 (n=0)	-	0	-	30	-	30	-
	W5 (n=0)	-	10	-	40	-	50	-
Average 2000 to 2010	S1	**34,694**	50	104.4	20	4.8	70	109.2
	S2	**25,423**	30	98.9	20	11.4	50	110.3
	S3	**33,094**	20	52.2	20	15.9	40	68.0
	S4	**17,026**	0	8.5	30	24.8	30	33.3
	S5	**36,588**	0	19.7	30	30.1	30	49.8
	S6	**281,791**	0	5.6	20	20.2	20	25.8
	W3	**3,231**	0	6.4	30	25.9	30	32.2
	W5	**673**	10	27.3	40	25.8	50	53.1

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

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 as indicated in Table 8
SFM Objective: We will sustain sufficient and appropriately distributed habitat elements to maintain native species richness.	

STATUS AND COMMENTS:

The following table indicates the condition of shrub habitat within the DFA as reported in the 2005 SFMP Annual Report and the initial state of that shrub habitat as 2005 was the start of reporting for this indicator. The current status of shrub habitat is outlined in the table below as well in order to see the change over time in the amount of shrub habitat. Because shrubs are intimately associated with early seral forest, harvested area is a significant contributor to the amount of shrub habitat. The next time this indicator will be reported on will be in 2016. 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 8: Shrub Habitat Targets, Current and Proposed Condition

NDU	NDU Subunit	Total NDU Area	2005 Shrub		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 TREE PATCHES

Indicator Statement	Target Statement
Cumulative wildlife tree patch percentage in blocks harvested since 1995 by BEC sub zone	Cumulative wildlife tree patch % will be at least 8% by BEC sub zone
SFM Objective: We will sustain sufficient and appropriately distributed suitable habitat elements to maintain native species richness. 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:

The table below summarizes the current status for WTP retention levels for blocks on which harvesting began since 1995 to the end of 2010. 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 9: Summary of WTP's in Areas Harvested Since 1995

BEC Sub Zone	Total Area Under Prescription	WTP Area	WTP %
BWBSmw	**8,687**	**1,432**	16%
BWBSwk	**2,367**	**440**	19%
ESSFmv	**6,027**	**714**	12%
ESSFwc	**689**	**39**	6%
ESSFwk	**4,130**	**465**	11%
SBSwk	**9,967**	**1,652**	17%
Grand Total	**31,867**	**4,741**	**15%**

REVISIONS:

No revisions are suggested for this indicator or objective.

2.10 HABITAT SUPPLY FOR SPECIES OF PUBLIC CONCERN

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
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 in the Draft SFMP 4. When the final analysis was completed in support of the timber supply analysis this indicator was reassessed. The information presented in the following charts is also included in the proposed 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.

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.

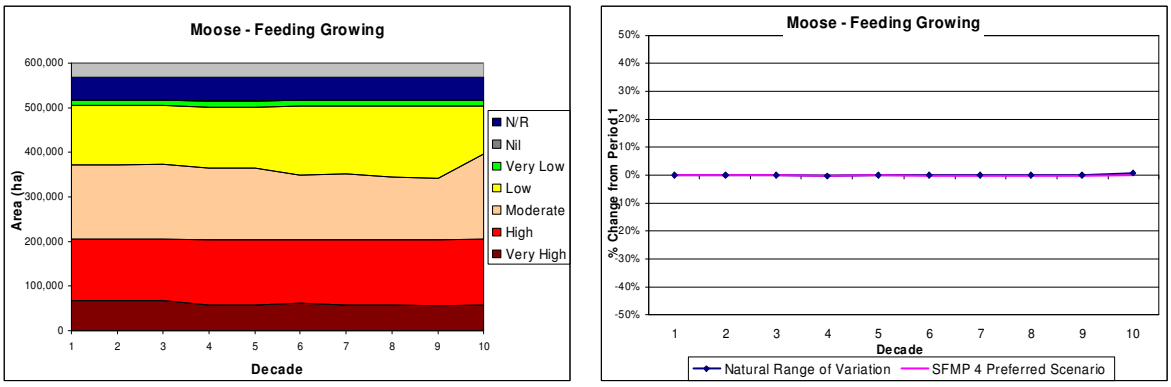

Figure 2: Moose Habitat Supply

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.

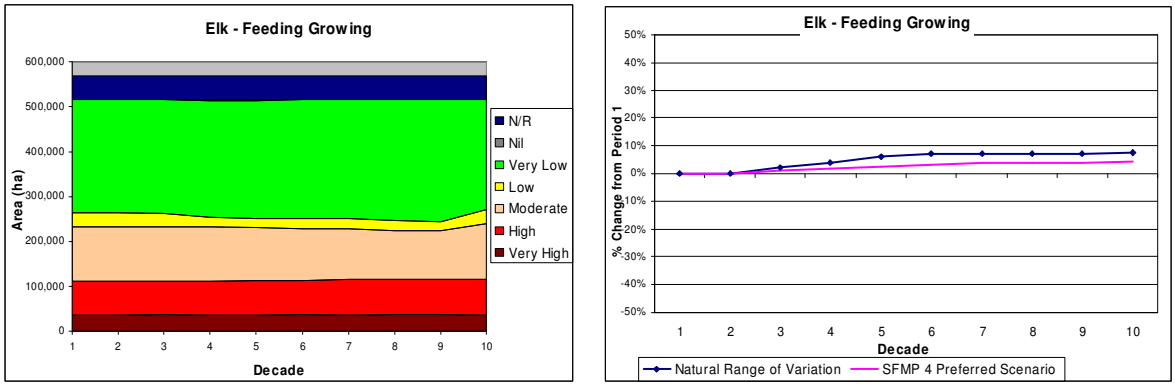

Figure 3: Elk Habitat Supply

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.

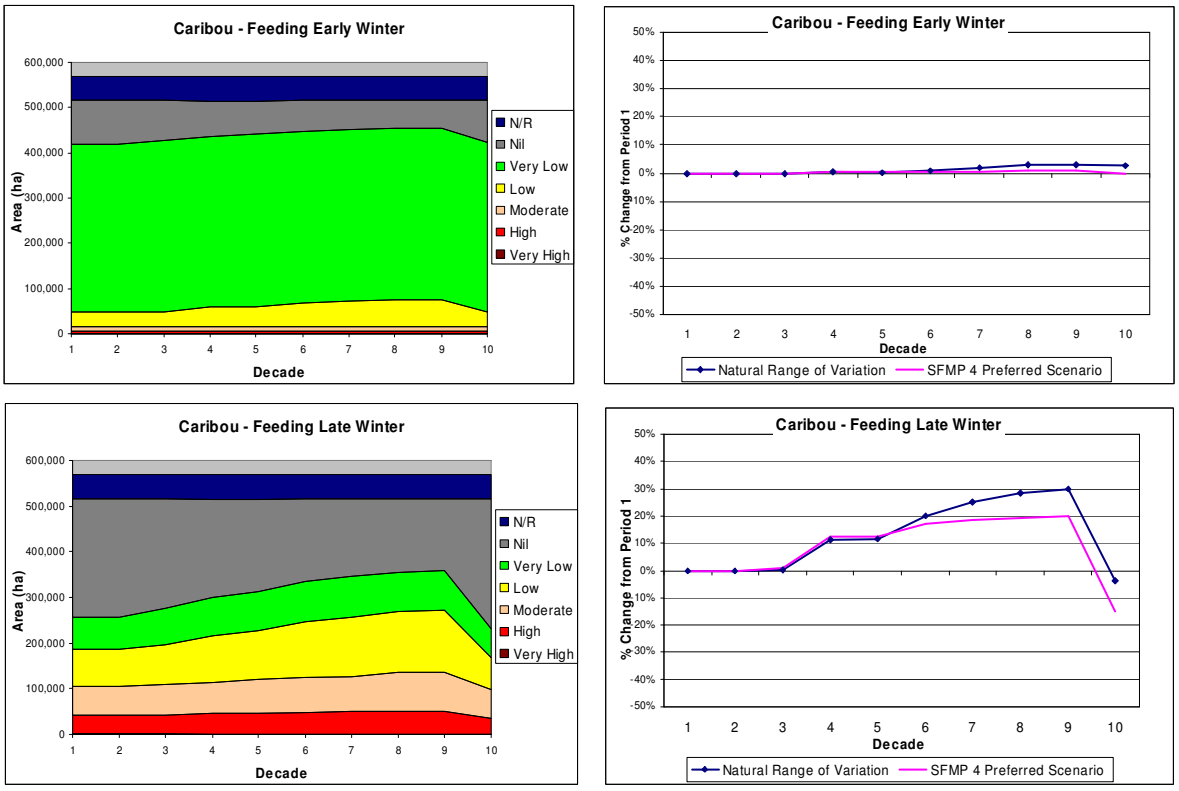

Figure 4: Caribou Habitat Supply

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.

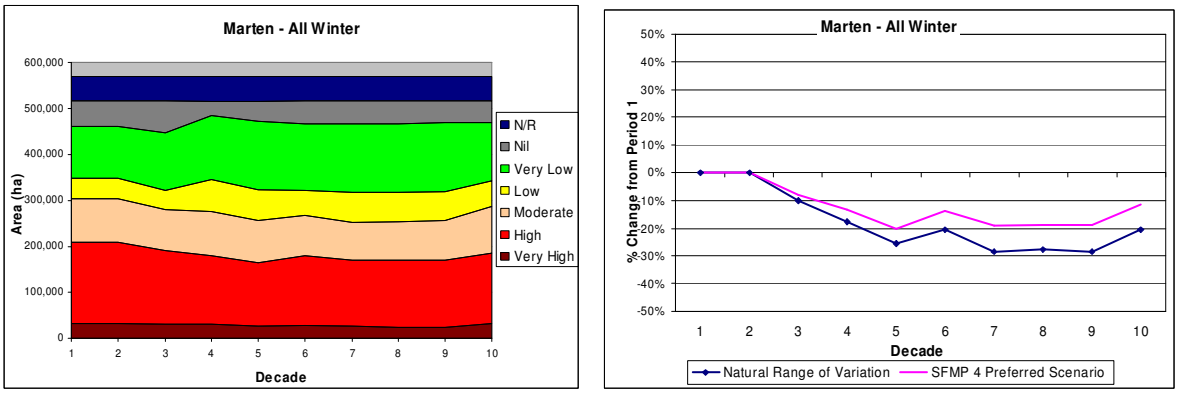

Figure 5: Marten Habitat Supply

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.

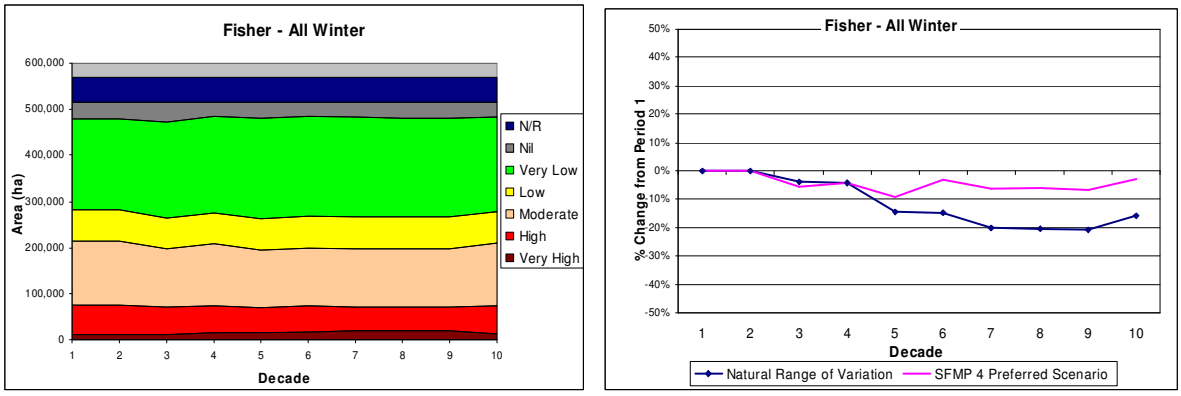

Figure 6: Fisher Habitat Supply

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.

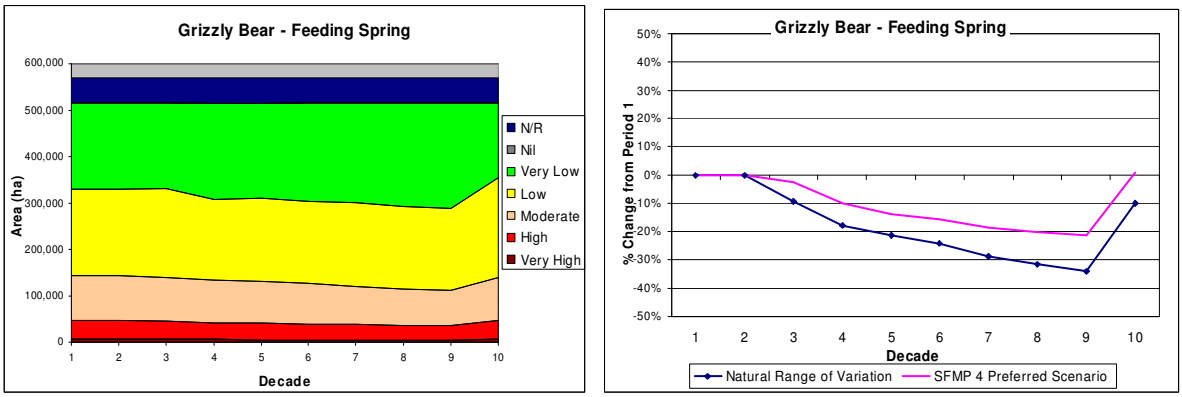

Figure 7: Grizzly Bear Habitat Supply

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.

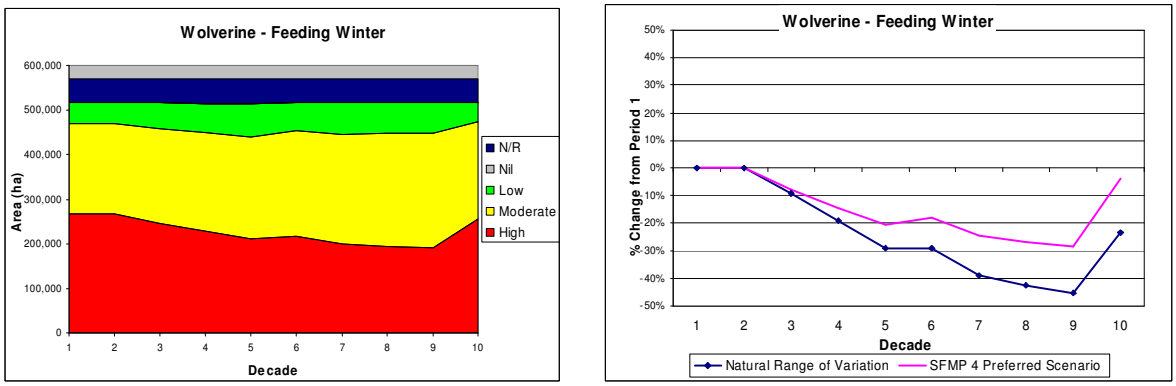

Figure 8: Wolverine Habitat Supply

REVISIONS:

No revisions are suggested for this indicator or objective.

2.11 SPECIES OF MANAGEMENT CONCERN

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
SFM Objective: We will maintain sufficient habitats for species at risk.	

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 2010 there were sixteen new blocks laid out. None of these blocks were in areas of, or contained environmental aspects of significance to the wildlife identified in the document *Guidelines for Species Using Localized Habitats for TFL48*.

REVISIONS:

This indicator will no longer sample blocks that have been laid out over the fiscal year, instead it will look at blocks with harvested completed within the same time frame. The change in sample criteria is to standardize the information that is required for reporting purposes between various indicators.

2.12 CONIFEROUS SEEDS

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
SFM Objectives: Conserve genetic diversity of tree stock.	

STATUS AND COMMENTS:

All seedlots planted within the DFA are 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 have been registered with and tracked by Tree Improvement Branch of the Ministry of Forests and Range.

In 2010 there were a total of 540,882 trees planted on TFL 48 of which BCTS and Canfor planted 360,772 and 180,110 respectively. Class A spruce seedlings became available in 2008 from the Ministry, however, Class A was only made available to BCTS.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.13 DECIDUOUS SEEDS AND VEGETATIVE MATERIAL

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
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 2010. Any seedlots 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

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
SFM Objective: We will implement management strategies appropriate to the long-term maintenance of protected areas and sites of special biological significance.	

STATUS AND COMMENTS:

In 2010 there was no harvesting or road construction 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 WILDLIFE HABITAT AREAS, UNGULATE WINTER RANGES AND DUNLEVY CREEK MANAGEMENT PLAN

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
SFM Objective: We will implement management strategies appropriate to the long-term maintenance of protected areas and sites of special biological significance.	

STATUS AND COMMENTS:

In 2010 there were no activities within UWR's, WHA's, or the Dunlevy Creek Management Plan area. This was consistent with the objectives.

In conjunction with the Ministry of Environment (MoE) Canfor worked to develop Ungulate Winter Ranges for Caribou and Mountain Goat within TFL 48. These areas were declared under the Forest and Range Practices Act and Government Actions Regulation on October 22, 2006 (those UWR's labeled u-9-002 on Figure 9) and on March 20, 2008 (those UWR's labeled u-9-004 on Figure 9).

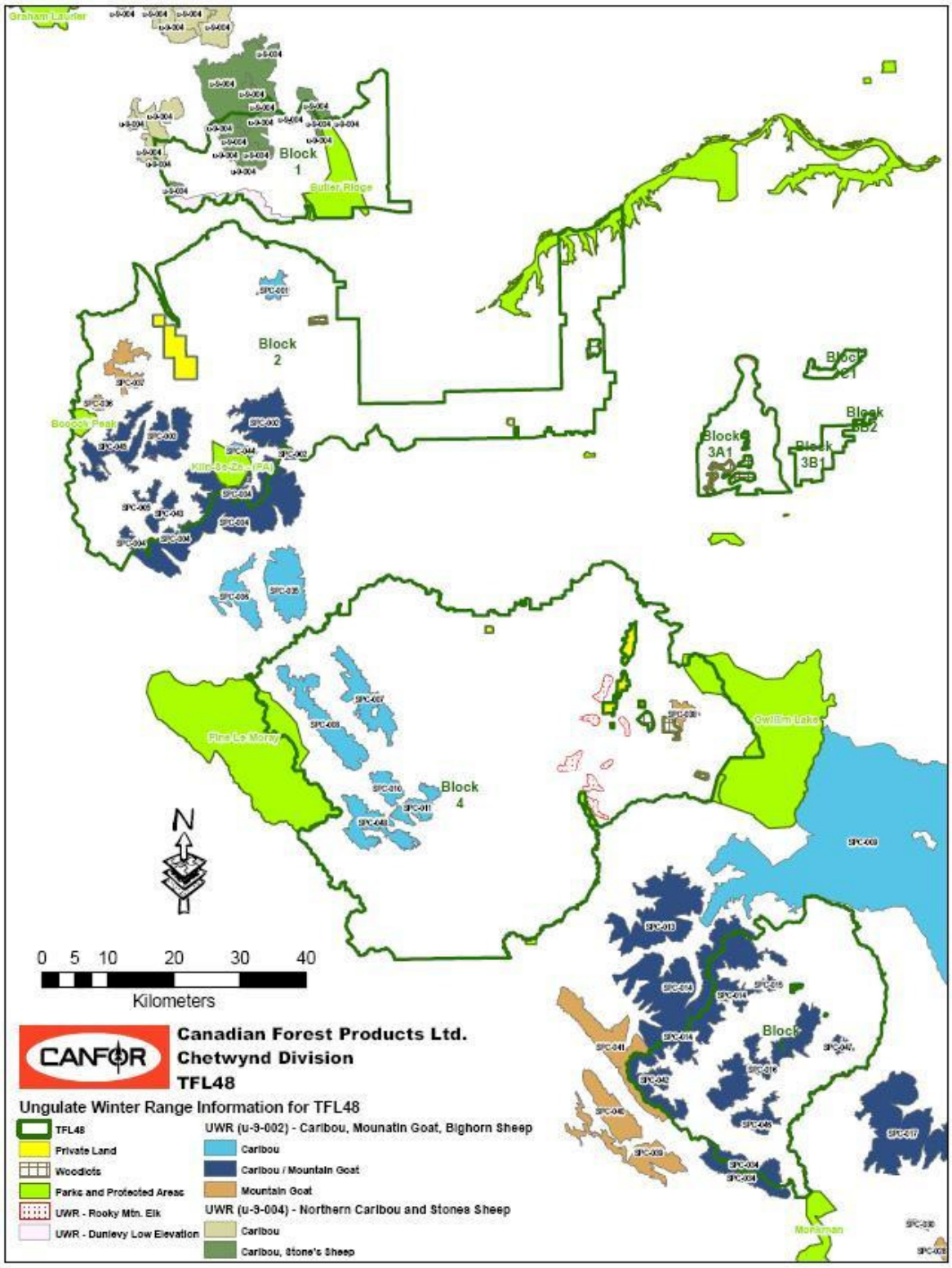

Figure 9: Ungulate Winter Ranges Declared as of 2008

REVISIONS:

No revisions are suggested for this indicator or objective.

2.16 FOREST HEALTH

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
SFM Objective: We will sustain a natural range of variability in ecosystem function, composition and structure, which allows ecosystems to recover from disturbances and stress.	

STATUS AND COMMENTS:

In 2010 the ongoing Mountain Pine Beetle (MPB) infestation was the only significant forest health agent that occurred within the DFA.

In the Dawson Creek TSA there seemed to be very little change (<10%) in the amount of infestation between 2008 and 2009. In 2010 the TSA seen an increase in infestation at >10% than in previous years. In July of 2010 the provincial government released a study which examined the overwintering survival of Mountain pine Beetle on the Peace Forest District Timber Supply Area (TSA). The TSA surrounding the TFL showed a low winter survival rate for the beetle. For the 2010 report the level of infestation is being recorded as consistent with the 2009 rate of spread.

Table 10: Summary of Forest Health Issues 2000-2007

Factor	2010 Volume (m^3)	2010 Area (ha)	2000-2010 Volume (m^3)	2000-2010 Area (ha)	2008 Comments
Blow Down	0	0	10,665	38.8	Derived area from volume /275.
Mountain Pine Beetle	590,000	2,150	7,451,550	27,096	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	**608,300**	**2,301**	**7,485,440**	**27,388.9**	

REVISIONS:

No revisions are suggested for this indicator or objective.

2.17 PROPORTION OF COMPLETED FOREST HEALTH ACTION PLANS

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
SFM Objective: We will sustain a natural range of variability in ecosystem function, composition and structure which allows ecosystems to recover from disturbances and stress.	

STATUS AND COMMENTS:

In June of 2010 the Ministry of Forests and Range released a memorandum regarding the Re-designation of Emergency Management Units. These units depict the location of various levels of Mountain Pine Beetle attack and associated with those levels of attack are one of three management strategies: aggressive; containment, and; salvage. The TFL was identified as an area that has sustained a high level of impact from the Mountain Pine beetle and was therefore identified as an area where the recommended management strategy is to harvest/salvage as much affected pine as possible. In 2007 when the Deputy Chief Forester determined the Annual Allowable Cut (AAC) for the TFL his direction/expectation for Canfor as the licensee was to direct harvesting towards pine leading stands with a target of exceeding 70% pine volume harvested. Deliveries from TFL 48 through 2010 were 76% pine being delivered (see Sec 2.22).

REVISIONS:

No revisions are suggested for this indicator or objective.

2.18 REGENERATION DECLARATION

Indicator Statement	Target Statement
Area weighted average age of harvested areas not initially restocked by DFA	Average age of harvested areas not initially restocked will be no more than 2 years
SFM Objectives: We will sustain a natural range of variability in ecosystem function, composition and structure which allows ecosystems to recover from disturbances and stress	

STATUS AND COMMENTS:

At the end of 2010 the average age of NSR on TFL 48 was 1.60 years for all areas where harvesting started prior to January 1, 2011.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.19 FREE GROWING STANDS

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
SFM Objectives: We will sustain a natural range of variability in ecosystem function, composition and structure which allows ecosystems to recover from disturbances 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 10 for status of areas harvested on TFL where there is a free growing requirement.

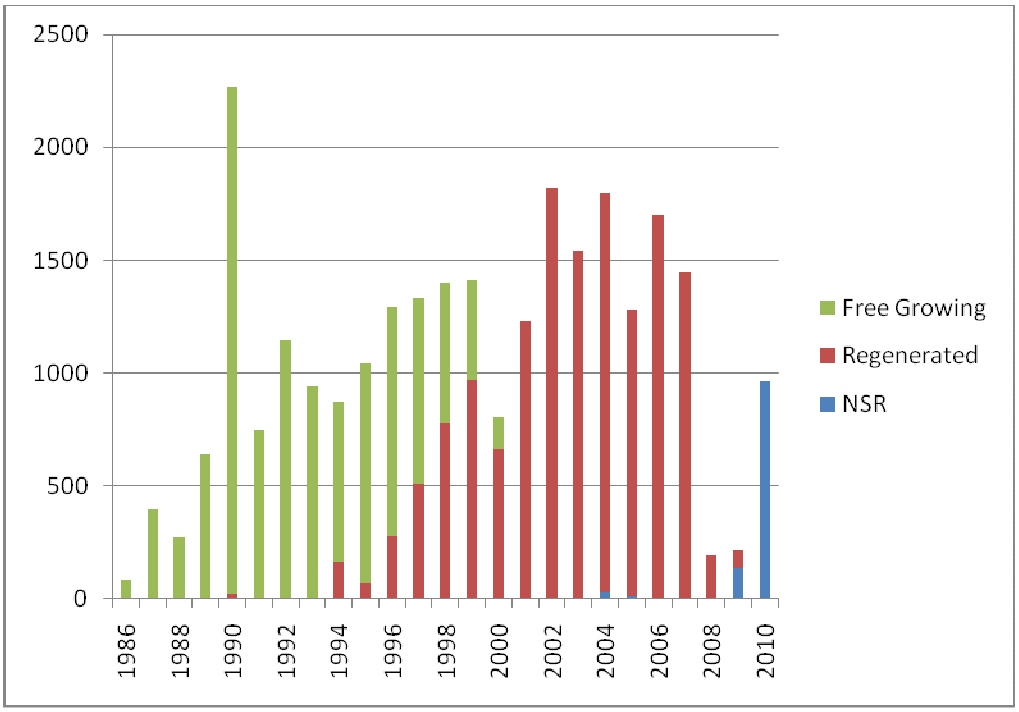

Figure 10: Regeneration/Free Growing Status by Year of Harvest Start

REVISIONS:

No revisions are suggested for this indicator or objective.

2.20 PERMANENT ACCESS CORRIDORS

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 2.5% of the gross land base of the DFA
SFM Objective: We will sustain the natural range of ecosystem productivity to support naturally occurring species. We will protect soil resources to sustain productive forests. We will sustain forests within the DFA.	

STATUS AND COMMENTS:

The following table reports the status as of 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.

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	4,709	0.72%
1 - ML (25m)	96	0.01%
2 - ML Sec (20m)	329	0.05%
3 - Operational (15m)	760	0.12%
4 - Block Perm (8m)	1,676	0.26%
Gravel Sec (30m)	52	0.01%
Grand Total	7,623	1.17%

Source VRI 2004

REVISIONS:

When this indicator is analyzed at the next TSR this Indicator will be moved to a 5 year reporting period to allow tracking of the performance on a shorter time interval than the TSR/AAC Determination process.

2.21 SITE INDEX

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
SFM Objective: We will sustain the natural range of ecosystem productivity to support naturally occurring species. We will protect soil resources to sustain productive forests.	

STATUS AND COMMENTS:

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

The SBSwk2 01 and SBSwk2 06 Lodgepole Pine units were below the predicted site index by slightly more than the 10% variance in 2009. In 2010 these units have shown improvement and are within the prescribed variance of 10%. In 2010 only 2 units (indicated below in yellow) exceed the 10% variance however both units contain minimal data and should not be considered statistically significant however they will be monitored to see if there is a continuing trend as more ha's get surveyed in these units.

Table 12: Site Index by Leading Species for Free Growing Stands

		Species								
		Subalpine Fir			White Spruce			Lodgepole Pine		
BEC	Site Series	Ha	SI	Predicted SI	Ha	SI	Predicted SI	Ha	SI	Predicted SI
BWBSmw1	1	-	-	N/A	1103.9	19.5	17.7	454.8	19.1	18
	2	-	-	N/A	170.7	17.6	9	36.8	20.3	12
	3	-	-	N/A	175.4	20.5	17	126.5	17.6	18
	4	-	-	N/A	179.9	17.7	12	37.8	19.3	15
	5	-	-	N/A	154.4	18.9	18	32.4	19.4	18
	6	-	-	N/A	65.4	17.9	18.1	0.9	14.5	18
	7	-	-	N/A	6	17.6	18	0.7	18.6	18
BWBSmw1 Total		-	-	N/A	1855.7	19.1	16.6	689.9	18.9	17.6
BWBSwk1	1	-	-	N/A	196.5	19.2	12	461.4	17.6	15
	2	-	-	N/A	19.2	18.1	9	79.8	16.8	12
	3	-	-	N/A	103.6	16	9	73.2	15.9	12
	4	-	-	N/A	4.4	21	12	7.6	12.9	15
	5	-	-	N/A	6.6	15	15	0.2	18.8	15
	6	-	-	N/A	6	15	15	0	24.4	15
BWBSwk1 Total		-	-	N/A	336.3	18	11.5	622.2	17.2	14.6
BWBSwk2	1	-	-	N/A	113.8	18.3	12	50.7	19	15
	2	-	-	N/A	1.9	18	9	0	0	12
	3	-	-	N/A	1.4	18	12	3.9	19	15
	4	-	-	N/A	2.5	18	9	0	0	12
	5	-	-	N/A	2.6	18	15	0	0	15
BWBSwk2 Total		-	-	N/A	122.2	18.3	11.9	54.6	19	15
ESSFmv2	1	1807.5	15.9	12	1341.2	18	15	575.9	18	15
	2	92.6	18.2	9	96.4	17.9	9	43.8	19.6	12
	3	78.7	16.7	6	35.9	18.7	6	39	18.6	9
	4	624.9	17.2	15	157.3	17.2	15	165.5	17.4	18
	5	9	16.4	15	5.2	16.6	15	0.5	21.6	15
	6	1.7	18	15	0.4	15.8	15	0	23.6	15
ESSFmv2 Total		2614.4	16.3	12.8	1636.4	17.9	14.6	824.7	18	15.1
ESSFmv4	1	0	0	12	45.8	18	15	0	0	15
	2	0	0	9	0.2	18	9	0	0	12
	3	0	0	6	0	17.5	6	0	0	9
	4	0	0	15	0.5	18	15	0	0	18
ESSFmv4 Total		0	0	10.5	46.5	18	15	0	0	13.5
ESSFwc3	1	162.7	14.3	15	2.3	16.5	15	0	0	N/A
	2	17.6	14.7	9	0	0	9	0	0	N/A

	3	41.9	15.4	15	0.7	23	15	0	0	N/A
ESSFwc3 Total		222.2	14.6	15	3	18	13	0	0	N/A
ESSFwk2	1	874.6	15.5	15	443	17.2	15	162.6	17.6	N/A
	2	451.6	17.4	9	61.6	17.7	9	55	17.4	N/A
	3	320.9	17.5	12	66.5	18.4	12	14.4	17.4	15
	4	299.9	18.5	15	121	16.1	15	13.8	17.1	N/A
	5	202.5	19.6	15	102.2	19.1	15	4.6	18.8	N/A
	6	38	16.4	12	9.2	18.8	12	1.6	17.5	N/A
ESSFwk2 Total		2187.5	17	12.4	803.5	17.4	14.1	252	17.5	15
SBSwk2	1	931.9	16.1	15	1359	19.9	21.8	876.4	19.5	21
	2	25.9	17.8	12	197.4	19.1	15	79.3	18.9	15
	3	245.7	15.6	12	558.8	19	18	767.3	19.2	18
	4	104.6	14.9	N/A	593	18.9	15	258.2	18.2	18
	5	169.9	17.4	18	528.5	19.5	21	152.3	18.9	21
	6	33.1	17.8	18	183.1	21.7	24	12	20.4	21
	7	6.9	15.6	N/A	114.3	19.2	N/A	37.5	20.9	N/A
SBSwk2 Total		1518	16.1	14.6	3534.1	19.6	19.7	2183	19.2	19.8
Grand Total		6542.1	16.4	12.8	8337.7	18.8	16.9	4626.4	18.6	17.4

REVISIONS:

No revisions are suggested for this indicator or objective.

2.22 AAC

Indicator Statement	Target Statement
Allowable Annual Cut	We will ensure that the Allowable Annual Cut will not adversely impact Long Term Harvest Level
SFM Objective: We will sustain the natural range of ecosystem productivity to support naturally occurring species. We will balance annual growth rate and harvest rate.	

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 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.

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**

As part of the implementation of the AAC in 2010, based on the cruise data and volume delivered, 76% of the volume was Lodgepole pine.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.23 SOIL DEGRADATION

Indicator Statement	Target Statement
Soil degradation	We will not exceed site degradation guidelines as defined in site plans
SFM Objective: We will protect soil resources to sustain productive forests.	

STATUS AND COMMENTS:

There were a total of 24 blocks with harvesting completed in 2010. West Fraser operating under a BCTS license harvested 10 blocks, followed by Canfor with 10 and LP Building Products on behalf of Tembec Industries Inc. harvested 4. All blocks harvested were stated to be within the site degradation guidelines defined in site plans.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.24 SOIL DISTURBANCE SURVEYS

Indicator Statement	Target Statement
Soil disturbance surveys	We will not exceed soil disturbance limits within cutblocks as defined in site plans
SFM Objective: We will protect soil resources to sustain productive forests.	

STATUS AND COMMENTS:

All 24 blocks with harvest completed in 2010 were within the soil disturbance guidelines defined in the site plans.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.25 USE OF ENVIRONMENTALLY FRIENDLY LUBRICANTS

Indicator Statement	Target Statement
Use of environmentally friendly lubricants	We will research and identify environmentally friendly lubricants bi-annually
SFM Objective: We will protect soil resources to sustain productive forests.	

STATUS AND COMMENTS:

Synthetic and vegetable-based hydraulic fluids are available, however they are currently regarded as inferior to hydrocarbon based fluids on the basis of cost and performance. Therefore no operational use of these lubricants has occurred.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.26 SPILLS ENTERING WATERBODIES

Indicator Statement	Target Statement
Number of reportable spills or misapplications entering water bodies	Zero reportable spills or misapplications entering water bodies
SFM Objective: Maintenance of water quality	

STATUS AND COMMENTS:

There were no spills or misapplications of any chemical or petroleum products into a riparian feature in 2010. In the summer of 2010 the Ministry of Environment conducted a field review of blocks that were treated in 2009 by aerial application and found some areas that were within Pesticide Free Zones where vegetation had been killed. Information is inclusive in determining whether or not herbicide was applied to a stream that contained water at the time of application.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.27 STREAM CROSSING QUALITY INDEX

Indicator Statement	Target Statement
Maximum Stream Crossing Quality Index (SCQI) by watershed	The maximum SCQI score is 0.40 by watershed
SFM Objective: We will maintain water quality and quantity.	

STATUS AND COMMENTS:

In the 2010 field season a total of 131 crossings were surveyed in the Upper Carbon (55), Lower Carbon (37), Eleven Mile (22), and Seven Mile (17) watersheds. Sampling of all the above mentioned watersheds is complete and based on the SCQI cumulative effects hazard rating. Based on the 2010 field sampling there is a very low potential that surface erosion originating from stream crossings will lead to cumulative watershed effects.

The cumulative results to date are summarized by watershed in Table 14. All watersheds are below the maximum target level. The watersheds sampled in 2010 are shaded in the table.

Table 14: SCQI and Water Quality Concerns for Watersheds within TFL 48 – Sampling Completed 2001 to 2010

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

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)
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
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	119	0.63	71.23	0.37	1	0	0	0	0
					2	0	66.7	33.3	0
					3	5.9	17.7	29.4	47.1
					4	3.3	26.7	26.7	43.3
					5	0	29.7	35.1	35.1
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	108	0.68	30.27	0.19	1	0	0	0	0
					2	0	0	100.0	0
					3	20.0	50.0	10.0	20.0
					4	21.3	42.6	23.0	13.1
					5	36.1	44.4	16.7	2.8
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

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 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
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

1. 1 = greater than 20m, 2 = 5 to 20m, 3 = 1.5 to 5m, 4 = 0.5 to 1.5m, 5 = less than 0.5m
2. Erosion indices cannot be calculated because these areas are not true watersheds.

REVISIONS:

No revisions are suggested for this indicator or objective.

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

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
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.

REVISIONS:

No revisions are suggested for this indicator or objective

2.29 PEAK FLOW INDEX

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
SFM Objective: We will maintain water quality and quantity.	

STATUS AND COMMENTS:

A new projection of Peak Flow Index (PFI) has been completed for 2010. Currently 34 of 34 watersheds (100%) are meeting the PFI target.

Table 15: Peak Flow Index Post Development Status

Watershed	H60 ELEV	Watershed ha	Below H60 ha	Below H60 ECA	Above H60 ha	Above H60 ECA	H60 Weighted ECA (ha)	Post Development PFI (%)	Max PFI
Adams Creek	1,107	5,458	2,102	11.5	3,355	31.5	58.8	1.1%	43
Aylard Creek	1,036	5,456	2,100	79.6	3,356	309.1	543.3	10.0%	37
Basin "862"	853	4,884	1,725	56.7	3,159	226.1	395.8	8.1%	43
Beany Creek	958	3,899	1,537	43.9	2,362	25.9	82.8	2.1%	37
Brazion Creek	1,220	32,375	11,850	1814.2	20,526	2141.9	5,027.0	15.5%	37
Burnt Creek	1,185	62,161	23,413	3549.4	38,748	3841.7	9,311.9	15.0%	37
Cameron Creek	783	3,613	1,273	8.2	2,340	38.1	65.4	1.8%	50
Dunlevy Creek	1,047	17,007	6,549	277.5	10,459	523.9	1,063.3	6.3%	31
Eleven Mile	1,326	21,603	8,318	619.1	13,285	1154.9	2,351.5	10.9%	43
Gaylard	1,029	15,638	5,780	845.1	9,858	1160.9	2,586.5	16.5%	31
Gething	996	18,505	6,550	901.1	11,956	1325.0	2,888.6	15.6%	31
Gwillim	1,066	4,488	1,586	63.6	2,902	200.8	364.7	8.1%	43
Hasler Creek	1,077	19,010	6,858	677.3	12,152	1601.1	3,078.9	16.2%	37
Highat Creek	1,037	15,647	5,382	699.8	10,265	1169.1	2,453.5	15.7%	43
Johnson	891	21,153	7,965	624.9	13,188	2592.5	4,513.7	21.3%	37
Lebleu Creek	874	1,999	719	13.6	1,280	28.5	56.4	2.8%	50
LeMoray Creek	1,291	11,190	4,013	654.1	7,177	1110.2	2,319.4	20.7%	37
Lower Carbon	1,057	13,167	4,992	711.3	8,176	520.6	1,492.1	11.3%	50
Lower Murray	1,066	17,398	6,308	439.3	11,091	434.3	1,090.8	6.3%	37

Lower Peace Reach	955	14,347	5,579	925.8	8,768	1228.1	2,767.9	19.3%	50
Lower Pine Residual	923	16,228	5,713	485.7	10,515	1426.5	2,625.4	16.2%	43
Lower Sukunka	904	54,089	18,791	1287.4	35,298	2344.6	4,804.3	8.9%	43
Lower Wolverine	1,161	23,241	8,678	936.0	14,563	1570.0	3,291.1	14.2%	37
Medicine Woman Creek	975	1,876	718	0.0	1,158	0.0	0.0	0.0%	35
Middle Wolverine	1,205	17,585	6,549	613.6	11,036	2233.5	3,963.8	22.5%	43
North Peace Residual	929	9,462	3,813	239.1	5,649	91.8	376.7	4.0%	50
Ruddy Creek	922	6,445	2,495	68.4	3,949	104.9	225.8	3.5%	31
Seven Mile	1,257	7,878	2,990	275.4	4,889	372.7	834.5	10.6%	43
Trapper Creek	1,179	7,571	2,616	0.3	4,955	126.9	190.7	2.5%	37
Upper Carbon	1,291	46,258	17,582	2319.0	28,676	1773.4	4,979.1	10.8%	37
Upper Murray	1,294	17,858	6,474	1686.7	11,384	1190.9	3,473.0	19.4%	37
Upper Pine Residual	1,082	40,084	14,265	1024.7	25,819	4213.4	7,344.8	18.3%	37
Upper Sukunka	1,075	23,444	8,602	820.2	14,842	1934.3	3,721.6	15.9%	43
Upper Wolverine	1,378	18,032	6,325	930.1	11,707	1180.6	2,701.0	15.0%	37

REVISIONS:

No revisions are suggested for this indicator or objective.

2.30 WATERSHED REVIEWS

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
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 or proposed to be exceeded, (see Table 7). 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 then a watershed review will be conducted.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.31 CARBON SEQUESTRATION

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
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.

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.

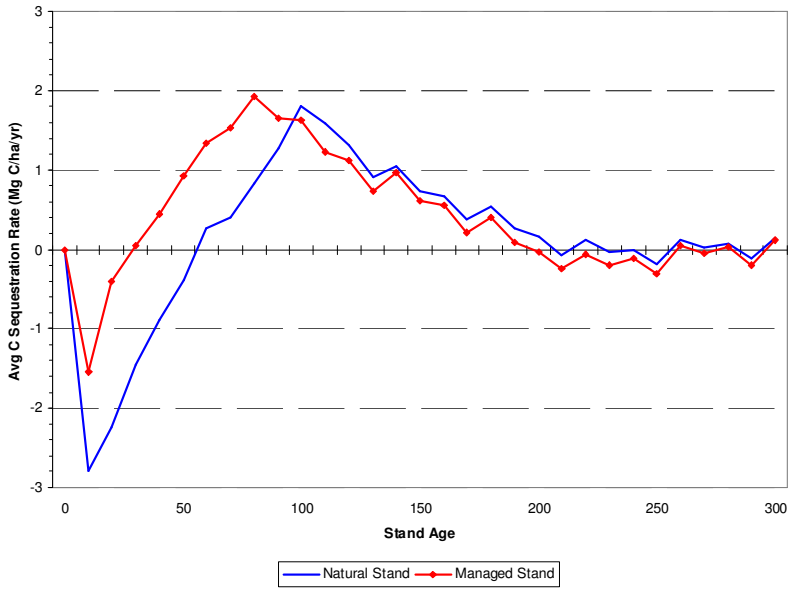

Figure 11: An Example of Average C Sequestration Rates for a Natural Spruce Leading BWBS Mesic Site Stand (Forecast AU 5) and an Associated Managed Stand (Forecast AU m^3)

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 11). 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.

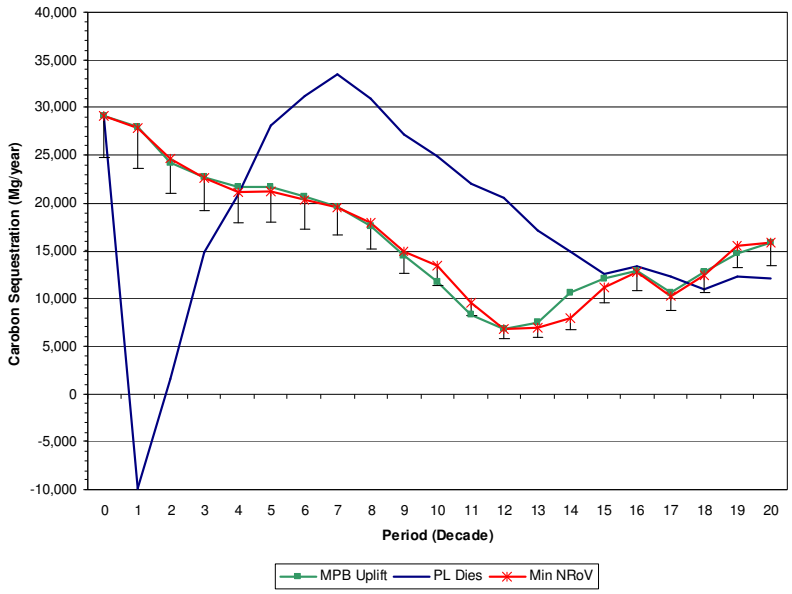

Figure 12: Carbon Sequestration (Mg C/year) within TFL 48 Over Time

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.

2.32 ECOSYSTEM CARBON STORAGE (MG) IN THE DFA

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
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.

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 14). 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.

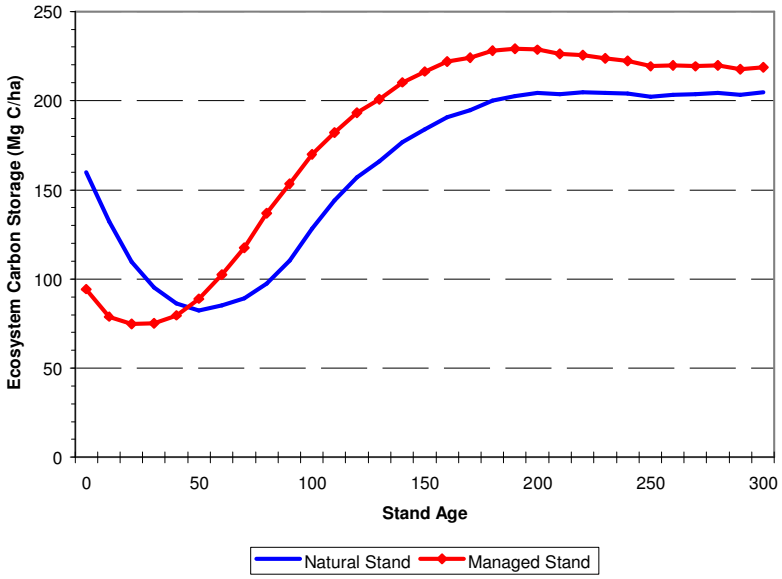

Figure 13: An Example of C Storage for a Natural Spruce Leading BWBS Mesic Site Stand (Forecast AU 5) and an Associated Managed Stand (Forecast AU m^3)

For comparison a stand level graph (Figure 13) 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.

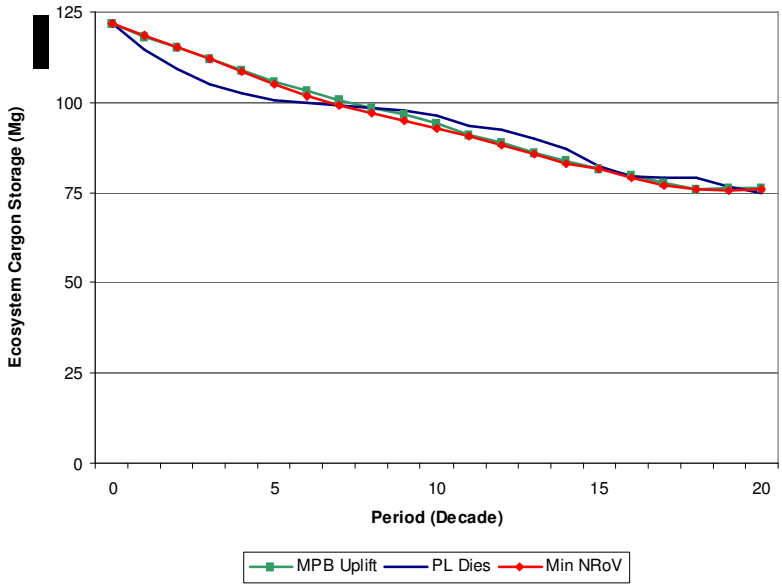

Figure 14: Total Ecosystem Carbon (Mg) Storage in the DFA Over Time

REVISIONS:

No revisions are suggested for this indicator or objective.

2.33 AREA OF FORESTED LAND

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 into AAC calculation every 5 years
SFM Objective: We will sustain forests within the DFA.	

STATUS AND COMMENTS:

This indicator was last reported on at the last TSR analysis which was 5 years ago. 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 utilizes 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 where feasible, the overlap of various developments is utilized in order to reduce the amount of land that is developed. 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 to 5,990 ha's.

Table 16: 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:

No revisions are suggested for this indicator or objective.

2.34 RANGE OPPORTUNITIES

Indicator Statement	Target Statement
Annual minimum number of Animal Unit Months opportunity	We will maintain an annual minimum of 1,500 Animal Unit Months (excludes brush control by sheep grazing)
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 table indicates the amount of grazing AUM's provided on TFL 48 in 2010. In 2010 there was a 20% reduction in the amount of active Range Tenures when compared to the number of tenures that were active in 2009. To gain an understanding for the cause in the reduction of tenures sought, the Peace Forest District Range Agrologist was contacted. Based on their expertise, the decline has been largely attributed to poor calf returns for cattle for the past 7 years. This has caused declining herds. Coupled with some recent poor yields in hay, in 2010 many farmers took advantage of increased cattle prices to sell off their remaining herds.

To ensure the decline in the interest of acquiring and maintaining these Range Tenures was not due to the level of AUM's not being sufficient to support the amount of livestock per hectare, an analysis was conducted to see what historical levels of AUM/Ha's were. Since 2005 there has been an overall increase in the amount of AUM's per hectare of land that the permit pertained to. In 2010 the AUM/ha ratio was 0.41, the highest ratio identified in the analysis. Based on this analysis it is concluded that forest practices have not negatively impacted the amount AUM's on the DFA. However, the reduction in the amount of tenures that are active has caused the level of AUM's to fall below the target level of 1500, and as such, this indicator has been reported as not having met the Indicator Target.

[2] Roads are captured in Indicator 2.20 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 17: AUM's on TFL48 in 2010

Range Tenure	Total AUMs	TFL Proportion	TFL AUM's
RAN075680	111	87.9	98
RAN074239	51	100.0	51
RAN073876	767	34.9	268
RAN076505	118	9.9	12
RAN074307	356	39.8	142
RAN075557	177	0.1	0
RAN076672	699	58.7	410
RAN076313	170	.04	0
RAN073263	104	1.2	1
RAN073616	366	26.5	97
RAN076419	157	2.8	4
RAN077560	665	42.1	280
Total			**1,363**

REVISIONS:

No revisions are suggested for this indicator or objective however, if the trend in the number of range tenures continues to decrease than the AUM target will need to be reviewed.

2.35 MAINTENANCE OF VISUAL LANDSCAPE INVENTORY

Indicator Statement	Target Statement
Maintenance of Visual Landscape Inventory	We will maintain and update an approved visual landscape inventory
SFM Objective: We will provide opportunities for a feasible mix of timber, recreational activities, visual quality, and non-timber commercial activities.	

STATUS AND COMMENTS:

Canfor completed an update to the VLI in 1999, and provided recommended Visual Quality Objectives in March 2002. In 2005 the Ministry of Forests and Range subsequently reviewed all VLI's completed in the previous Dawson Creek Forest District and consolidated all information including Canfor's 1999 inventory, into one seamless VLI. During this process it was discovered that there were some errors in Canfor's previous VLI in that it did not contain some known scenic areas. The consolidated VLI polygons were classified into two separate classes, those with existing visual quality objectives (EVQO) and those new polygons (added in the Canfor 1999 VLI) with recommended visual quality classes (RVQC). The EVQO polygons including those previously missing from Canfor's data have been used in the base case timber supply analysis being completed in support of the SFMP 4. The RVQC polygons will be added to the EVQO areas and the impacts modeled in a sensitivity analysis. Pending the sensitivity analysis the MoFR will make a decision on establishing these as VQO's through a Government Actions Regulation Order. The analysis was completed and submitted to the MoFR in the summer of 2006. It is expected that the MoFR will formally establish all areas in the VLI in the near future. Further work to VLI was conducted in 2008 and 2009 by the MoFR with the intent of having it become a GAR Order in the near future. In 2010 there has been no official release of the new VLI via a GAR Order. The area in which the work was conducted is located in an area that Canfor is not currently developing nor have any plans on developing in the very near future.

REVISIONS:

This indicator will no longer be reported on in future Annual Reports.

2.36 PROPORTION OF HARVESTING CONSISTENT WITH VISUAL QUALITY OBJECTIVE

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 (VQO)
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 2010 there were six 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.

2.37 BACK COUNTRY CONDITION

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 0 for baseline)
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 2010 there was no harvesting or road construction in or adjacent to any of the backcountry areas.

The baseline (2001) and current (2005) recreational opportunity spectrum for the stated Backcountry areas are shown on the following tables (Table 18 and Table 19). Over the term of MP 3 there was harvesting and road building activity in both the Dunlevy and North Burnt back country areas. Primary road construction, harvesting, silviculture activities and deactivation have been completed. The change in condition has moved approximately 945 ha in the Dunlevy and 1,798 ha in the North Burnt areas from semi-primitive non-motorized to the semi primitive motorized classification. This change is acceptable within this indicator as the deactivation and removal of bridges in the Dunlevy and North Burnt, and de-construction of the road access to CP 722 in the northern portion of the North Burnt area have maintained motorized access barriers.

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.

2.38 RECREATIONAL SITES

Indicator Statement	Target Statement
Number of recreational trails and campsites maintained by Canfor	Canfor will provide and/or maintain a minimum of one trail and three recreation campsites on the DFA
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 currently maintains the Gething Creek, Carbon Lake and Wright Lake campsites and the 11 Mile Lake 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 11 Mile Lake trailhead is road accessible and with a gentle hike you can be in the alpine in just a few hours. 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 2010 the campsites and trail system were maintained and in very good condition.

REVISIONS:

The 11 Mile Trail has been identified as accessing an Ungulate Winter Range for caribou. The government Order located at http://www.env.gov.bc.ca/wld/documents/uwr/u-9-002_Order.pdf , provides direction for forest and recreation activity. The direction provided for recreation was to restrict development of recreation sites or trails. In complying with the Order, the 11 Mile Trail will no longer be maintained in order for the trail to return to its natural state.

2.39 HARVEST LEVELS/VOLUMES

Indicator Statement	Target Statement
Harvest levels/volumes	Harvest volumes will not exceed 110% of the 5 year periodic cut control volume for the DFA
SFM Objective: We will ensure that harvest levels do not adversely impact the long term harvest level.	

STATUS AND COMMENTS:

In 2007 the deputy Chief Forester determined a new AAC for TFL 48. In 2010 Canfor's annual rent was for a volume of 678,782 m^3. BCTS has an allocation set at 54,330 m^3 in the TFL license document, however, with the AAC uplift in 2007 to account for the Mountain Pine Beetle there is an additional 62,588 m^3 available to the crown which includes BCTS and is the reason why BCTS is exceeding 100% of their allocation. Canfor harvested 53.5% and BCTS 240.6% of the available allocation in 2010.

Table 20: 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 (%)	Allowable 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**				
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	680,645	0	118,074	17.4	54,330	41,080	75.6	34,522
2009	683,082	0	150,959	22.1	54,330	106,820	196.6	23,189
2010	678,782	0	362,944	53.5	58,630	141,081	240.6	32,405
Running Total	**2,638,482**	**0**	**1,120,395**	**42.5**	**223,316**	**288,981**	**129.4**	**151,047**

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.

2.40 WASTE

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
SFM Objective: We will ensure that harvest levels do not adversely impact the long term harvest level.	

STATUS AND COMMENTS:

In 2010 there were a total of 24 blocks harvested. Blocks that were surveyed were below waste benchmarks and those that were not surveyed will be in snow free conditions in 2011.

REVISIONS:

The Target Statement will be revised in the 2011 Annual Report to account for the government changes made to the stumpage pricing system. Waste is no longer measured in scale based stumpage which applies to Cutting Permits that are >35% red and grey mountain pine beetle attacked by net merchantable volume.

2.41 HARVEST METHOD

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
SFM Objective: We will ensure that harvest levels do not adversely impact the long-term harvest level.	

STATUS AND COMMENTS:

The following Figure 15 shows the status over the current cut control period 2007 – 2011. 2007 is the beginning of the new cut control period and the target is to be met at the end of 2011. The status is that over this period 84% of the harvesting on has been completed using conventional ground based methods, with the remainder 16% being conducted with a cable/highlead system.

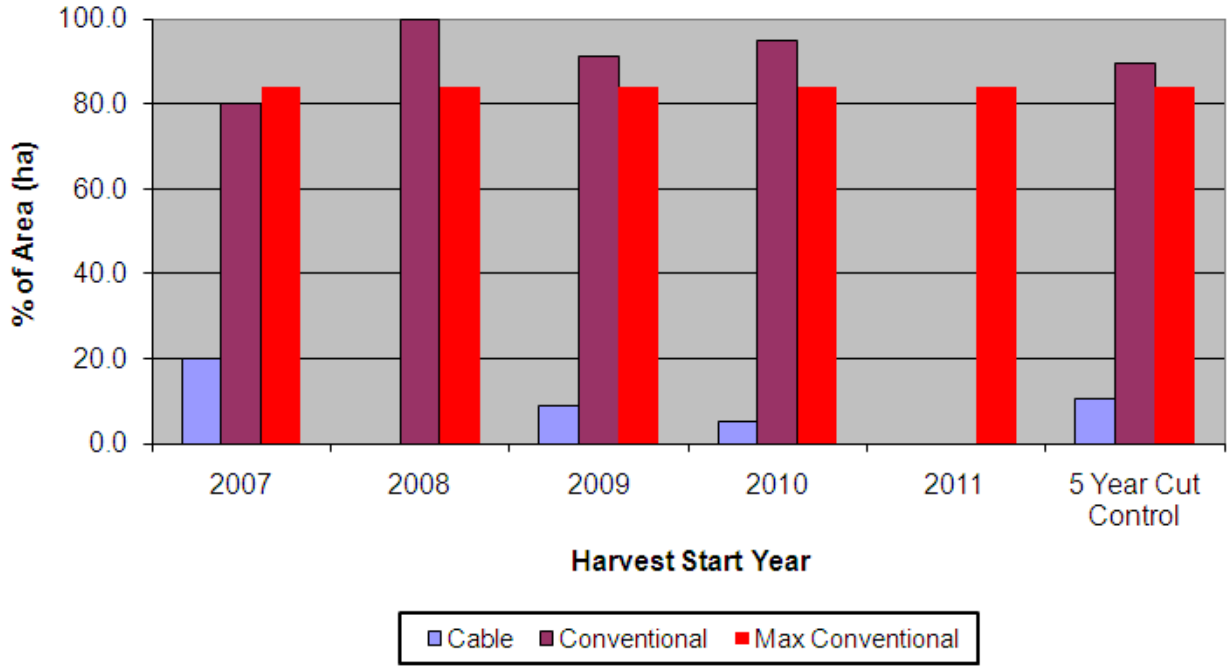

Figure 15: Proportion of Conventional Harvest Systems Used 2007-2011

REVISIONS:

The target was revised in 2010 to reflect the amount of conventional Timber Harvesting Landbase contained in the Timber Supply Review Analysis conducted to determine the AAC back in 2007.

2.42 SUMMER AND FALL DELIVERIES

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
SFM Objective: We will maintain a local, up to date timber processing facility and infrastructure.	

STATUS AND COMMENTS:

This indicator was suspended in 2008 and 2009 when the mill was curtailed. In 2010, 172,420m^3 were delivered between May 1st and October 31st.

Figure 16: Summer and Fall Deliveries

REVISIONS:

No revisions are suggested for this indicator or objective.

2.43 LOCAL EMPLOYMENT

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
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 17 for current status of this indicator. In 2010, not including stumpage, Canfor paid $11.8MM to all vendors. Local vendors or contractors were paid $10.8MM or 92% of total expenditures. The five-year rolling average from 2006 through 2010 saw 84% of expenditures made to local vendors or contractors.

Figure 17: Proportion of Dollars Spent on Local vs Non-Local Contractors

REVISIONS:

No revisions are suggested for this indicator or objective.

2.44 COMMUNITY DONATIONS

Indicator Statement	Target Statement
Canfor community donations per year	A minimum of $7,000/year will be made available for community donations
SFM Objective: We will ensure contributions and benefits to the community (ie. donations, training).	

STATUS AND COMMENTS:

In 2010 the Chetwynd sawmill began production again after curtailment for nearly two years. The capital investment required for the mill was a significant contribution from the company in poor market conditions. Because of poor market conditions there is no monetary funding made available to the Canfor Chetwynd Division for donations.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.45 CONSISTENCY WITH THIRD PARTY ACTION PLANS

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
SFM Objective: To help ensure distribution of benefits, cooperative relationships, across local stakeholders and First Nations.	

STATUS AND COMMENTS:

In 2010 there were no third party action plans developed as there were no third party issues that were relevant to the DFA.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.46 KNOWN VALUES AND USES ADDRESSED IN OPERATIONAL PLANNING

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
SFM Objective: We will recognize and respect Treaty 8 rights.	

STATUS AND COMMENTS:

In 2010 there were no known traditional site-specific aboriginal values and uses identified that were required to be addressed in operational plans.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.47 CONFORMANCE TO ELEMENTS PERTINENT TO TREATY RIGHTS

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, 3.4, 3.6, 3.7, 3.8, 3.9 and 3.10), and • Element 3.2 Water Quality and Quantity Indicators (3.26, 3.27, 3.28, 3.29, and 3.30)
SFM Objective: We will recognize and respect Treaty 8 rights, and respect known traditional aboriginal forest values and uses.	

STATUS AND COMMENTS:

In 2010 all indicators in Elements 1.1, 1.2 and 3.2 were met.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.48 LRMP IMPLEMENTATION MEETINGS ATTENDED BY CANFOR

Indicator Statement	Target Statement
Proportion of LRMP implementation or update meetings attended by Canfor and BCTS	100% of meetings will be attended by Canfor and BCTS and information provided as required
SFM Objective: We will support land use processes including the LRMP implementation.	

STATUS AND COMMENTS:

There were no LRMP meetings held in 2010. At the meeting held in 2009 it was identified that the process would no longer be pursued and as such this indicator will no longer be reported on.

Table 21: LRMP Meetings

Year	Number of LRMP Meetings	Number Attended by Canfor/BCTS
1999	2	2
2000	4	4
2001	4	4
2002	1	1
2003	0	0
2004	1	1
2005	1	1
2006	0	0
2007	1	1
2008	0	0
2009	0	0
2010	0	0

REVISIONS:

This indicator will not be reported out on after this 2010 Annual Report due to the collapse of the process.

2.49 PUBLIC ADVISORY COMMITTEE

Indicator Statement	Target Statement
Public Advisory Committee	We will establish and maintain Public Advisory Committee and hold at least one meeting annually
SFM Objective: We will have an effective and satisfactory process that enables public participation of stakeholders and First Nations.	

STATUS AND COMMENTS:

- There was one PAC meeting held in 2010. The purpose of this meeting was to review the annual report monitoring the implementation of SFMP 4.

Table 22: Public Advisory Committee Meetings

Year	Number of PAC Meetings
2000	8
2001	3
2002	3 (+1 field trip)
2003	1
2004	4
2005	5
2006	1
2007	1 (+ 1 field trip)
2008	1
2009	1
2010	1

REVISIONS:

No revisions are suggested for this indicator or objective.

2.50 PUBLIC ADVISORY COMMITTEE TERMS OF REFERENCE

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)
SFM Objective: 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 September 10, 2009. The next required review for acceptance of the PAC is in 2011.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.51 RESPONSE TO PUBLIC INQUIRIES

Indicator Statement	Target Statement
Percentage of timely responses to public inquiries	We will respond to 100% of public inquiries concerning our forestry practices within one month of receipt and provide summary to PAC annually
SFM Objective: We will have an effective and satisfactory process that enables public participation of stakeholders and First Nations.	

STATUS AND COMMENTS:

In 2010 there were no public complaints pertaining to operations on the TFL.

REVISIONS:

No revisions are suggested for this indicator or objective.

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

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 on Canfor's website (http://www.canfor.com/sustainability/certification/csa.asp), others upon request and distributed to PAC members and advisors
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/sustainability/certification/csa.asp). Also included are copies of annual reports and summaries of the 3rd party external audits completed on TFL 48. Copies of the above have been circulated to members of the PAC and advisors as well.

The 2010 annual report is posted after review with the Public Advisory Committee.

REVISIONS:

No revisions are suggested for this indicator or objective.

2.53 SPATIAL FORECASTING AND ANALYSIS

Indicator Statement	Target Statement
Spatial forecasting and analysis models	We will use spatial forecasting and analysis models to develop strategic SFM analysis and rotation length plans for SFMP 4
SFM Objective: We will improve and apply knowledge of forest ecosystems, values and management.	

STATUS AND COMMENTS:

Canfor has chosen to use the Remsoft Spatial Planning System (Woodstock v3.2, Spatial Woodstock and Stanley v5) for the timber supply analysis completed in support of this SFM plan and the AAC determination. The next report will be done in conjunction with the next timber supply analysis.

REVISIONS:

This indicator will no longer be reported on after this annual report.

2.54 CURRENCY OF VEGETATION RESOURCE INVENTORY

Indicator Statement	Target Statement
Currency of vegetation inventory	We will use up-to-date vegetation inventory
SFM Objective: We will improve and apply knowledge of forest ecosystems, values and management.	

STATUS AND COMMENTS:

Phase I for TFL 48 was completed in 2000 and Phase II including Net Volume Adjustment Factoring (NVAF) was completed in 2004. The VRI was updated to account for activities and depletion to the end of 2004 due to harvesting, road construction and uses by other industrial users. Ages, heights and volumes were projected to 2005. This is the information that formed the basis for the analysis of this SFM plan and the associated timber supply analysis.

Height, age, and net merchantable volume were adjusted as a result of the Phase II and NVAF sampling completed on TFL 48. TSR volume is defined as the net merchantable volume at the 12.5cm+ utilization level in lodgepole pine leading stands and the 17.5cm+ level in all other stands. After adjustment, the average height increased by 5%, age decreased by 7% and TSR volume increase by 34%. The TSR volume increased by 18% in the high priority sample areas (those mature areas most likely to contribute to the timber harvesting land base) (JS Thrower & Associates 2005).

REVISIONS:

This indicator will no longer be reported on after this annual report.

1 ABBREVIATIONS AND DEFINITIONS

AAC	Annual Allowable Cut
AOA	Archaeological Overview Assessment
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
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	Sustainable Forest Management
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