

SUSTAINABLE FOREST MANAGEMENT PLAN

2000 ANNUAL REPORT

*Canadian Forest Products Ltd.
Peace Region
Chetwynd Operations — TFL 48*



Canadian Forest Products Ltd.

Chetwynd
Chetwynd, BC V0C 1J0

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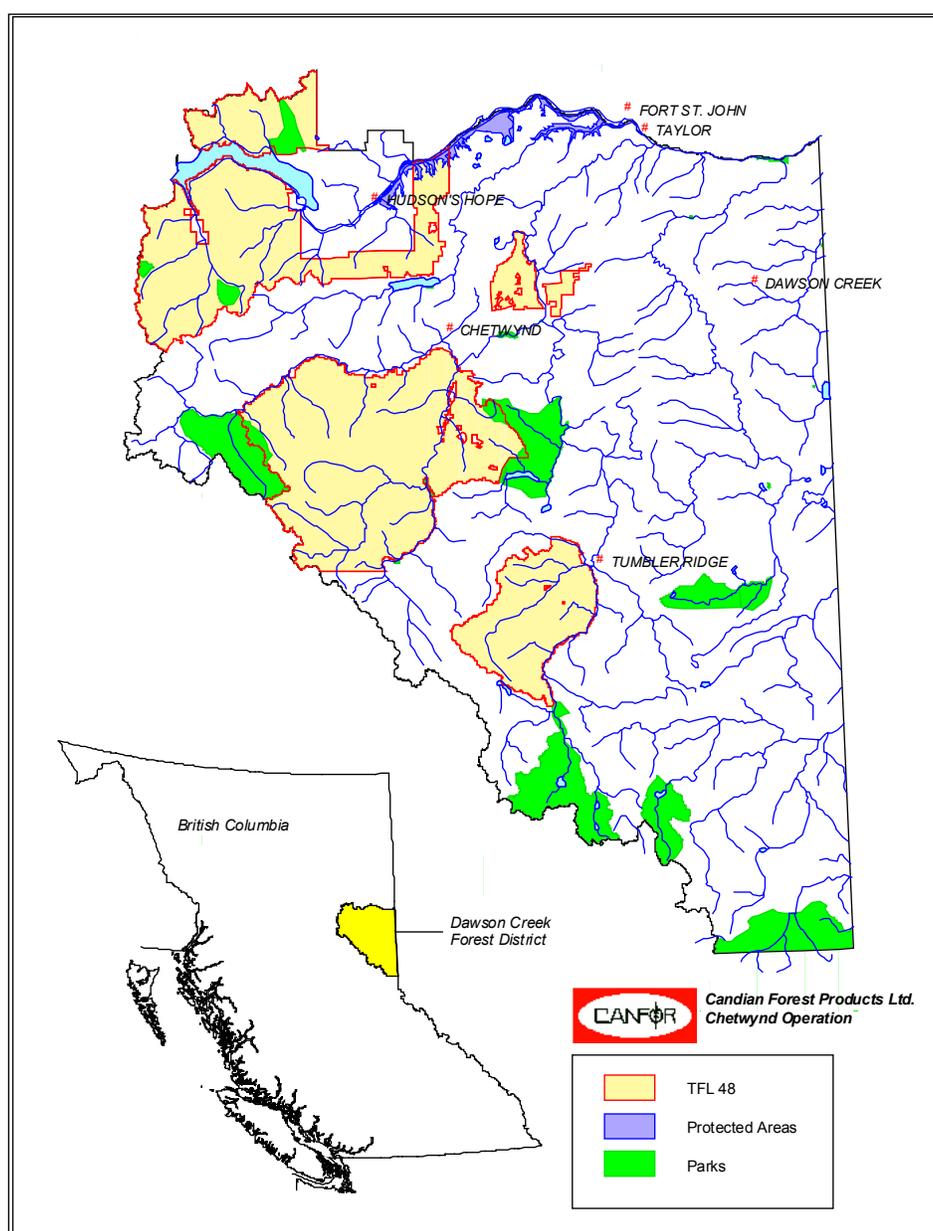
We would like to thank John Deal, Canfor-Englewood Logging Division for providing the report format, Christine Quinn, Canfor-Grande Prairie Operation, for carefully reviewing the document, Carol Norris for her hard work in compiling the document and the Chetwynd Woodlands staff for compiling data.

We would like to thank the Public Advisory Committee members and advisors for their continued input to the CSA process and providing input on the draft document.

1 INTRODUCTION & OVERVIEW

Canadian Forest Products Ltd. (Canfor) achieved registration under the Canadian Standards Association CAN/CSA Z809-96 Sustainable Forest Management Standards for Tree Farm Licence (TFL) 48's (see Figure 1) forestry operations in July 2000. In partial fulfilment of achieving that registration, a public group — Chetwynd Public Advisory Committee (PAC) — was formed at the beginning of 2000 to help Canfor identify quantifiable local-level Indicators and Objectives of sustainable forest management. The 52 Indicators and Objectives identified by the PAC were detailed with associated forest management practices to achieve those objectives in a draft Management Plan for Tree Farm Licence 48 (Canfor, 2000). This report summarizes the status of each of those indicators.

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. This report provides the status, to the end of 2000, for most of the 52 Indicators and Objectives of the draft Management Plan. In some cases (e.g., Indicator 39 Botanical Forest Products) where new information was relatively easy to summarize and provides additional information to the PAC we have included data to mid-April 2001. 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 draft Management Plan 3 for Tree Farm Licence 48 (Canfor, 2000).

1.1 OVERVIEW

Generally, the status of the Indicators has changed little since they were first reported in the draft Management Plan. Given the long-term nature of forest management and forest management practices, these small changes are not surprising. A poor forest products market and resultant shutdowns of the Chetwynd sawmill have resulted in large changes in socio-economic indicators (Indicator 34) for 2000 but generally either the Objectives are still being met, or results are expected in the long-term.

Progress has been made on Objectives such as Wildlife Habitat Modeling (Indicator 5) and Patch Size (Indicator 2), but other Objectives such as habitat connectivity (Indicator 3) will require more time for further quantification. Further review during preparation of this report has shown that some timelines for either completion or reporting of Objectives will require revision. Those suggested revisions are explained throughout this report.

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).*

2 SFM INDICATORS AND OBJECTIVES

This document is presented in a format that is easier to read than the draft Management Plan, with each Indicator identified in a second-order heading. This new format will be reflected in the proposed Management Plan. The text provides a simple report of the status of the Indicator to the end of 2000. For further information on the Indicators and Objectives, the reader should refer to the July 2000 draft Management Plan (Canfor, 2000).

The format of each status report is described below:

X.X INDICATOR NAME

Indicator:	Objective:
#. A reiteration of the Indicator as identified in the SFM matrix.	A reiteration of the Objective as identified in the SFM matrix.

STATUS AND COMMENTS

This section provides an update on the status of each Indicator and Objective. The best information available up to and including December 31 2000 (except where noted) was used for the preparation of this status report.

REVISIONS

When required, this section describes Canfor's suggested revisions to details (i.e., wording, reporting periods) of the Indicator and Objective. These revisions will be presented to the PAC for their review.

2.1 CONSERVATION OF BIOLOGICAL DIVERSITY

Indicator:	Objective:
1. Forest type and seral stage distribution	<p>1-1 We will sustain forest types over time.</p> <p>1-2 We will sustain seral stage within the natural range over time.</p>

2.1-1 Forest Types Over Time

STATUS AND COMMENTS

There is no new information to present for this indicator. Canfor will continue to develop a tracking system over the term of MP 3 to track forest types over time. The status of this indicator was reported in draft MP 3 shown in Table 1:

Table 1: Forest Types March 2000

Forest Type	Area ('000 ha)	%
Coniferous	455	80%
Mixed-Coniferous	28	5%
Mixed-Deciduous	19	3%
Deciduous	69	12%
Totals	571	100%

Source: VRI 1999

REVISIONS

No revisions are suggested for this indicator or objective.

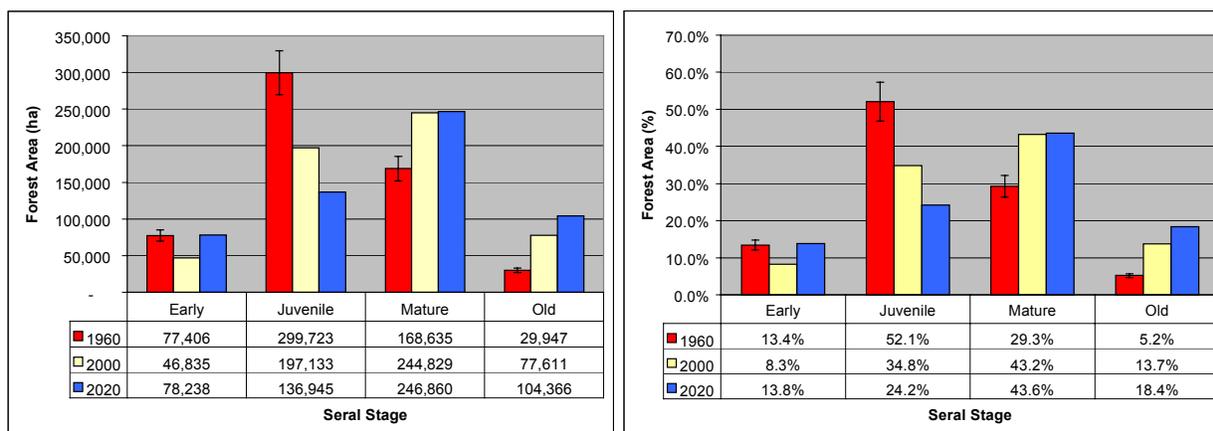
2.1-2 Seral Stage Over Time

STATUS AND COMMENTS

In consultation with the Ministry of Forests and Ministry of Environment Lands and Parks, the Landscape Units for the Dawson Creek Forest District have been realigned. The new boundaries are consistent with the TFL boundaries.

The seral stage distribution for 1960 has been established. These results are shown in Figure 1 below. The lines shown on the 1960 bars represent the +/- 10%, which was established as the acceptable variance. Currently the TFL is not within 10% of any of the 1960 seral stage baselines. Only the early seral stage target will be met by 2020. Juvenile, mature and old seral stage targets are not met due in part to harvest levels being below the productive capacity of the landbase and the advent of fire suppression over the past 40 years.

Figure 2: 1960-2000-2020 Seral Stage Summary for TFL 48



The seral stage distribution for 2000 is based on the updated Vegetation Resource Inventory (VRI) to March 2000 and the 2020 seral stage distribution is based on the 20-year plan submitted to the Ministry of Forests in support of Management Plan 3. The next FDP submission will include an update to the VRI.

Due to Landscape Unit (LU) boundaries changing, the Biogeoclimatic Ecological Classification (BEC) inventory adjusted based on 2000 field work, and the 20-Year Plan being completed, the seral stage distribution for the LU's has been recalculated. Table 1 shows seral stage distribution for 2000 and 2020 by LU and BEC and replaces Table 4 from the Draft MP 3. The source and analytical methods are shown in the 20-Year Plan Report (see Glossary) dated April 2001 that was submitted in support of MP 3 for TFL 48.

Table 2 Seral Stages 2000 and 2020

Seral Stage Area(ha) of Productive Forest by Landscape Unit / BEC Zone for 2000 and 2020		Seral Stage																		Total 2000	Total 2020	
		Early				Juvenile				Mature				Old								Base Case Targets *
		2000		2020		2000		2020		2000		2020		2000		2020		Surplus / Deficit	Surplus / Deficit			
Landscape Unit	BEC	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Surplus / Deficit	Area	%	Surplus / Deficit			
BOUCHER	BWBSmw 1-C	1,439	12.7%	2,118	18.7%	5,284	46.6%	4,326	38.2%	3,818	33.7%	2,887	25.5%	786	6.9%	-142	1,995	17.6%	1,067	8.2%	11,327	11,327
	BWBSmw 1-D	161	1.0%	2,279	14.2%	8,877	55.2%	4,345	27.0%	2,984	18.6%	4,578	28.5%	4,051	25.2%	2,492	4,871	30.3%	3,312	9.7%	16,074	16,074
	BWBSwk 1-C	442	8.4%	2,002	38.0%	1,374	26.1%	980	18.6%	3,094	58.8%	1,253	23.8%	354	6.7%	-78	1,029	19.5%	597	8.2%	5,264	5,264
	BWBSwk 1-D	8	0.5%	168	9.3%	855	47.2%	596	32.9%	517	28.5%	254	14.0%	431	23.8%	255	792	43.8%	616	9.7%	1,810	1,810
	SBS wk 2	5	0.6%	5	0.5%	881	92.5%	882	92.5%	66	7.0%	66	7.0%		0.0%	-64		0.0%	-64	6.7%	953	953
BOUCHER Total		2,055	5.8%	6,573	18.6%	17,271	48.7%	11,129	31.4%	10,480	29.6%	9,038	25.5%	5,622	15.9%		8,688	24.5%			35,428	35,428
BURNT-LEMORAY	AT	7	6.4%		0.0%	77	67.5%	85	73.9%	30	26.1%	30	26.1%		0.0%		-	0.0%		N/A	114	114
	BWBSmw 1-C	0	0.0%	0	0.0%	2	20.1%	0	0.0%	0	0.1%	2	20.1%	7	79.8%	6	7	79.9%	6	8.2%	8	8
	BWBSmw 1-D		0.0%		0.0%	1	2.5%	1	2.5%	2	4.0%	0	0.0%	41	93.4%	36	42	97.5%	38	9.7%	43	43
	ESSFwc 3	1,989	4.8%	742	1.8%	16,364	39.3%	13,654	32.8%	19,736	47.4%	22,612	54.4%	3,513	8.4%	-2,394	4,593	11.0%	-1,314	14.2%	41,602	41,602
	ESSFwcp3	57	2.0%		0.0%	2,539	87.5%	2,487	85.7%	306	10.5%	415	14.3%	0	0.0%		0	0.0%		N/A	2,902	2,902
	ESSFwk 2	4,173	10.7%	6,224	15.9%	12,933	33.1%	9,123	23.3%	14,875	38.1%	16,444	42.1%	7,105	18.2%	1,555	7,295	18.7%	1,745	14.2%	39,086	39,086
SBS wk 2	2,074	9.0%	3,891	16.9%	8,384	36.4%	3,422	14.8%	11,283	49.0%	14,131	61.3%	1,305	5.7%	-239	1,601	6.9%	57	6.7%	23,045	23,045	
BURNT-LEMORAY Total		8,299	7.8%	10,858	10.2%	40,300	37.7%	28,772	26.9%	46,232	43.3%	53,634	50.2%	11,970	11.2%		13,538	12.7%			106,801	106,801
CARBON	AT	0	0.0%		0.0%	212	99.3%	211	98.5%	1	0.7%	3	1.5%		0.0%			0.0%		N/A	214	214
	BWBSmw 1-C		0.0%		0.0%	5	46.2%	5	46.2%	5	53.8%	5	53.8%		0.0%	-1		0.0%	-1	8.2%	10	10
	BWBSmw 1-D		0.0%		0.0%	5	29.8%	5	29.8%		0.0%		0.0%	12	70.2%	10	12	70.2%	10	9.7%	17	17
	ESSFmv 2	1,413	3.1%	4,573	9.9%	13,831	30.0%	8,932	19.3%	27,146	58.8%	28,156	61.0%	3,774	8.2%	681	4,504	9.8%	1,411	6.7%	46,165	46,165
	ESSFmvp2	19	0.6%		0.0%	2,397	76.7%	2,302	73.7%	709	22.7%	802	25.7%	0	0.0%		21	0.7%		N/A	3,125	3,125
	ESSFwc 3		0.0%	204	2.1%	1,546	16.0%	1,376	14.2%	6,384	65.9%	5,229	53.9%	1,764	18.2%	387	2,885	29.8%	1,509	14.2%	9,694	9,694
	ESSFwcp3		0.0%		0.0%	885	62.7%	810	57.4%	523	37.0%	539	38.1%	5	0.3%		64	4.5%		N/A	1,413	1,413
	ESSFwk 2	40	0.9%	679	15.6%	298	6.8%	267	6.1%	2,131	48.9%	1,153	26.4%	1,893	43.4%	1,273	2,262	51.9%	1,643	14.2%	4,361	4,361
SBS wk 2	2,553	16.8%	4,551	29.9%	763	5.0%	454	3.0%	11,182	73.4%	9,298	61.0%	738	4.8%	-283	933	6.1%	-88	6.7%	15,235	15,235	
CARBON Total		4,025	5.0%	10,007	12.5%	19,942	24.9%	14,363	17.9%	48,081	59.9%	45,184	56.3%	8,186	10.2%		10,681	13.3%			80,234	80,234
DUNLEVY	AT	0	0.5%		0.0%	75	79.1%	75	79.3%	19	20.4%	20	20.7%		0.0%			0.0%		N/A	94	94
	BWBSmw 1-C	1,471	14.2%	1,227	11.8%	2,911	28.1%	3,385	32.7%	4,718	45.5%	2,300	22.2%	1,263	12.2%	413	3,451	33.3%	2,601	8.2%	10,363	10,363
	BWBSmw 1-D	566	6.2%	388	4.2%	4,501	49.1%	4,003	43.7%	621	6.8%	1,053	11.5%	3,476	37.9%	2,587	3,720	40.6%	2,831	9.7%	9,163	9,163
	BWBSwk 2-C	1,191	16.1%	959	13.0%	2,451	33.1%	3,106	42.0%	2,877	38.9%	1,696	22.9%	883	11.9%	276	1,641	22.2%	1,035	8.2%	7,402	7,402
	BWBSwk 2-D	11	0.2%	460	9.0%	1,422	27.8%	1,011	19.8%	723	14.1%	416	8.1%	2,964	57.9%	2,467	3,231	63.1%	2,735	9.7%	5,119	5,119
	ESSFmv 4	1,147	9.8%	995	8.5%	7,002	59.7%	5,662	48.3%	3,556	30.3%	5,042	43.0%	23	0.2%	-763	29	0.2%	-757	6.7%	11,728	11,728
ESSFmvp4	39	2.7%		0.0%	876	61.6%	857	60.3%	503	35.4%	561	39.5%	3	0.2%		3	0.2%		N/A	1,422	1,422	
DUNLEVY Total		4,425	9.8%	4,029	8.9%	19,238	42.5%	18,099	40.0%	13,017	28.7%	11,088	24.5%	8,612	19.0%		12,076	26.7%			45,291	45,291
EAST PINE	BWBSmw 1-C	802	14.0%	2,072	36.1%	286	5.0%	512	8.9%	4,425	77.1%	1,210	21.1%	230	4.0%	-241	1,949	33.9%	1,478	8.2%	5,743	5,743
	BWBSmw 1-D	960	6.9%	1,419	10.2%	5,064	36.4%	4,645	33.4%	693	5.0%	1,324	9.5%	7,177	51.7%	5,830	6,507	46.8%	5,160	9.7%	13,895	13,895
EAST PINE Total		1,762	9.0%	3,491	17.8%	5,350	27.2%	5,157	26.3%	5,119	26.1%	2,534	12.9%	7,408	37.7%		8,457	43.1%			19,638	19,638

Seral Stage Area(ha) of Productive Forest by Landscape Unit / BEC Zone for 2000 and 2020		Seral Stage																		Total 2000	Total 2020	
		Early				Juvenile				Mature				Old								Base Case Targets*
		2000		2020		2000		2020		2000		2020		2000		2020		Surplus / Deficit				
Landscape Unit	BEC	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Surplus / Deficit	Area	%	Surplus / Deficit			
GETHING	BWBSmw 1-C	2,474	27.7%	3,279	36.7%	755	8.5%	794	8.9%	2,497	28.0%	667	7.5%	3,198	35.8%	2,466	4,184	46.9%	3,452	8.2%	8,924	8,924
	BWBSmw 1-D	466	17.4%	71	2.7%	301	11.3%	701	26.2%	31	1.2%	62	2.3%	1,875	70.1%	1,615	1,839	68.8%	1,580	9.7%	2,672	2,672
	ESSFmv 2	2,126	8.8%	4,876	20.3%	3,515	14.6%	2,246	9.3%	18,148	75.4%	16,155	67.1%	269	1.1%	-1,343	783	3.3%	-829	6.7%	24,059	24,059
	ESSFmvp2		0.0%		0.0%	98	92.4%	94	88.2%	8	7.6%	13	11.8%		0.0%			0.0%		N/A	106	106
	SBS wk 2	4,465	22.2%	7,174	35.6%	1,005	5.0%	1,051	5.2%	14,501	72.0%	11,452	56.8%	183	0.9%	-1,167	476	2.4%	-874	6.7%	20,153	20,153
GETHING Total		9,531	17.0%	15,400	27.5%	5,674	10.1%	4,885	8.7%	35,185	62.9%	28,348	50.7%	5,524	9.9%		7,282	13.0%			55,915	55,915
HIGHHAT	BWBSmw 1-C	257	3.3%	742	9.7%	2,734	35.7%	1,361	17.8%	2,855	37.2%	2,447	31.9%	1,821	23.8%	1,193	3,117	40.6%	2,488	8.2%	7,667	7,667
	BWBSmw 1-D	92	1.1%	929	10.8%	1,640	19.1%	639	7.4%	3,940	45.8%	1,042	12.1%	2,927	34.0%	2,093	5,988	69.6%	5,154	9.7%	8,598	8,598
	BWBSwk 1-C	1	13.9%	1	13.9%		0.0%		0.0%	0	4.5%		0.0%	8	81.6%	8	9	86.1%	8	8.2%	10	10
	ESSFmv 2	2,019	6.4%	4,388	14.0%	15,057	48.1%	10,473	33.4%	13,246	42.3%	15,457	49.4%	996	3.2%	-2,041	1,000	3.2%	-2,038	9.7%	31,318	31,318
	ESSFwc 3	0	0.0%		0.0%	7	91.6%	4	55.8%	1	8.4%	4	44.2%		0.0%	-1		0.0%	-1	14.2%	8	8
	ESSFwk 2	0	0.0%	379	14.9%	1,450	57.0%	934	36.7%	962	37.8%	1,135	44.6%	131	5.1%	-231	95	3.7%	-266	14.2%	2,543	2,543
	SBS wk 2	2,260	6.0%	5,862	15.6%	15,125	40.4%	4,467	11.9%	18,806	50.2%	26,218	70.0%	1,283	3.4%	-1,228	926	2.5%	-1,584	6.7%	37,473	37,473
HIGHHAT Total		4,629	5.3%	12,301	14.0%	36,012	41.1%	17,879	20.4%	39,810	45.4%	46,302	52.8%	7,167	8.2%		11,135	12.7%			87,618	87,618
MARTIN CREEK	BWBSmw 1-C	1,878	15.1%	3,069	24.6%	3,793	30.4%	2,152	17.3%	4,327	34.7%	3,250	26.1%	2,472	19.8%	1,450	4,000	32.1%	2,977	8.2%	12,471	12,471
	BWBSmw 1-D	195	1.8%	1,235	11.4%	2,982	27.4%	1,350	12.4%	3,249	29.9%	1,655	15.2%	4,444	40.9%	3,390	6,630	61.0%	5,576	9.7%	10,870	10,870
	BWBSwk 1-C	1,436	7.7%	3,209	17.2%	5,006	26.8%	2,533	13.5%	8,914	47.7%	6,396	34.2%	3,347	17.9%	1,813	6,567	35.1%	5,033	8.2%	18,704	18,704
	BWBSwk 1-D	47	2.2%	155	7.1%	869	39.8%	373	17.0%	831	38.0%	541	24.7%	439	20.1%	227	1,118	51.1%	906	9.7%	2,186	2,186
	ESSFmv 2	75	0.6%	1,192	8.8%	7,023	52.1%	3,263	24.2%	6,164	45.7%	8,651	64.2%	219	1.6%	-685	375	2.8%	-528	6.7%	13,481	13,481
MARTIN CREEK Total		3,631	6.3%	8,859	15.4%	19,674	34.1%	9,671	16.8%	23,486	40.7%	20,492	35.5%	10,921	18.9%		18,690	32.4%			57,712	57,712
WOLVERINE	AT	8	1.3%		0.0%	639	98.1%	641	98.5%	4	0.6%	10	1.5%		0.0%			0.0%		N/A	651	651
	BWBSmw 1-C	461	11.3%	740	18.1%	756	18.5%	417	10.2%	1,274	31.1%	767	18.7%	1,603	39.2%	1,268	2,172	53.0%	1,836	8.2%	4,095	4,095
	BWBSmw 1-D	9	0.6%	5	0.3%	469	32.0%	144	9.8%	355	24.1%	334	22.7%	636	43.3%	493	986	67.1%	844	9.7%	1,469	1,469
	BWBSwk 1-C	408	7.8%	806	15.3%	1,484	28.2%	962	18.3%	992	18.8%	916	17.4%	2,379	45.2%	1,948	2,580	49.0%	2,148	8.2%	5,263	5,263
	BWBSwk 1-D	4	0.3%	18	1.2%	915	63.1%	158	10.9%	153	10.6%	761	52.4%	378	26.1%	238	514	35.5%	374	9.7%	1,451	1,451
	ESSFmv 2	4,946	14.4%	2,210	6.4%	17,281	50.4%	16,085	46.9%	9,588	27.9%	13,179	38.4%	2,504	7.3%	204	2,844	8.3%	545	6.7%	34,319	34,319
	ESSFmvp2	154	5.0%		0.0%	2,042	65.8%	1,939	62.5%	902	29.1%	1,137	36.6%	5	0.2%		28	0.9%		N/A	3,103	3,103
	ESSFwc 3	54	1.0%	303	5.4%	898	16.1%	804	14.4%	3,472	62.1%	3,273	58.5%	1,167	20.9%	373	1,212	21.7%	418	14.2%	5,592	5,592
	ESSFwcp3	0	0.0%		0.0%	1,141	63.1%	1,122	62.0%	631	34.9%	646	35.7%	37	2.1%		42	2.3%		N/A	1,810	1,810
	ESSFwk 2	621	9.1%	1,217	17.9%	862	12.7%	801	11.8%	2,415	35.6%	2,060	30.4%	2,888	42.6%	1,924	2,708	39.9%	1,744	14.2%	6,786	6,786
SBS wk 2	1,698	12.9%	1,308	10.0%	7,184	54.8%	3,919	29.9%	3,633	27.7%	7,159	54.6%	605	4.6%	-274	732	5.6%	-147	6.7%	13,119	13,119	
WOLVERINE Total		8,364	10.8%	6,606	8.5%	33,672	43.4%	26,992	34.8%	23,420	30.2%	30,241	38.9%	12,202	15.7%		13,819	17.8%			77,658	77,658
Grand Total		46,721	8.3%	78,124	13.8%	197,133	34.8%	136,945	24.2%	244,829	43.2%	246,860	43.6%	77,611	13.7%		104,366	18.4%			566,295	566,295

*Targets as per TFL 48 Base Case Timber Supply Analysis (See Table 40 and Appendix C of Info Pack)

REVISIONS

Canfor suggests that based on analysis of the 1960 seral stage baseline that this may not be a reasonable indicator to manage towards. This target may prove unacceptable to wildlife habitat objectives and community stability dependent upon steady harvest flows. Canfor has initiated a Natural Disturbance / Fire Regime study for portions within the North and South Peace River Region. This work will form the basis for establishing Natural Disturbance frequencies, patterns and sizes. Subsequent work will then be required to determine when mature and old attributes are present within stands in the northeast. These works will then be considered to establish targets for the TFL. It is anticipated that this work will take 3 to 5 years to complete.

For the interim Canfor proposes to continue to monitor the performance of achieving seral stage distribution targets consistent with the TFL 48 base case Timber Supply Analysis in support of MP 3 at each Forest Development Plan submission. This will include updating the VRI to reflect current status and projecting the results of the proposed development.

2.2 PATCH SIZE DISTRIBUTION

Indicator:	Objective:
2. Patch size distribution	We will maintain a patch size consistent with natural disturbance types.

STATUS AND COMMENTS

Patch size was reported in Draft MP 3. It was noted during the registration audit that the methodology used to determine patch size appears to indicate a much higher proportion of smaller patches than expected based on field review.

A new methodology has been developed for monitoring patch size in early seral stages. In the original analysis roads, trails and seismic lines were buffered and removed from the forested landbase resulting in small patches being reported. For this new analysis, disturbances less than 10m wide were amalgamated back into the early seral patch.

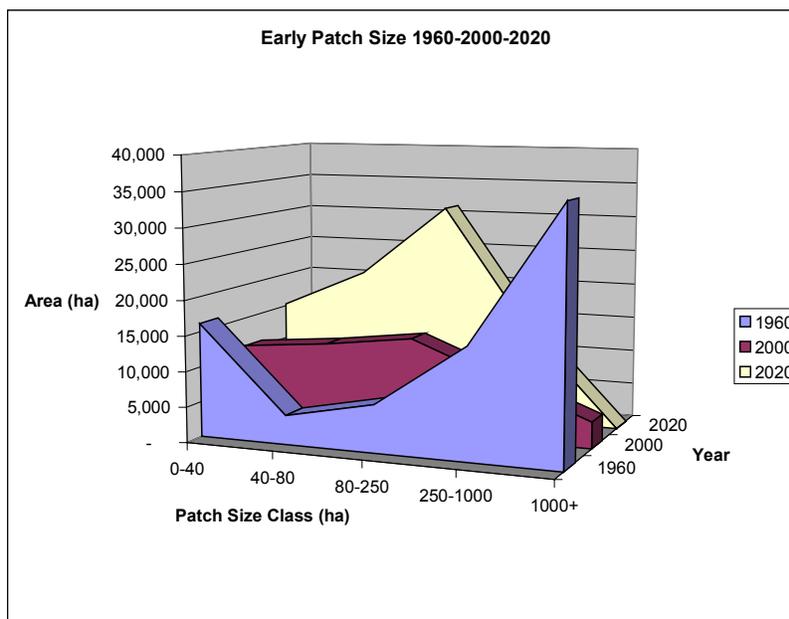
Patch size is reported only at the Landscape Unit level. Patches were not artificially split by the Landscape Unit or NDT boundary transects. Patches that crossed a Landscape Unit boundary are reported by the Landscape Unit in which the largest portion of the patch exists.

As timber harvesting progresses from 1960 to 2020 several trends are noted. Across the TFL patches within the 0-40 ha range stay within the range of variation expressed in the 1960 baseline. The area of patches in 40-80 ha and 80-250 ha steadily increases while the area in patches greater than 250 ha steadily decreases.

Table 3. Early Seral Patch Size 1960 - 2000 - 2020

Landscape Unit Name	Patch Size Class (% area by Class)														
	0-40 ha			40-80 ha			80-250 ha			250-1000 ha			1000+ ha		
	1960	2000	2020	1960	2000	2020	1960	2000	2020	1960	2000	2020	1960	2000	2020
BOUCHER	12%	32%	13%	5%	13%	22%	8%	34%	32%	16%	22%	34%	59%	0%	0%
BURNT-LEMORAY	24%	14%	18%	2%	19%	29%	5%	39%	37%	10%	28%	16%	60%	0%	0%
CARBON	43%	34%	29%	14%	48%	29%	23%	18%	42%	21%	0%	0%	0%	0%	0%
DUNLEVY	6%	17%	21%	2%	10%	25%	7%	21%	39%	11%	52%	15%	75%	0%	0%
EAST PINE	35%	47%	20%	5%	41%	15%	16%	12%	57%	44%	0%	8%	0%	0%	0%
GETHING	25%	13%	14%	6%	34%	30%	0%	22%	41%	68%	14%	15%	0%	18%	0%
HIGHHAT	28%	33%	18%	7%	29%	25%	17%	38%	35%	35%	0%	21%	13%	0%	0%
MARTIN CREEK	47%	33%	15%	15%	21%	21%	16%	36%	35%	21%	9%	29%	0%	0%	0%
WOLVERINE	19%	19%	29%	4%	13%	24%	2%	25%	39%	22%	20%	8%	53%	23%	0%
TFL Total	21%	22%	19%	5%	25%	26%	9%	28%	39%	20%	18%	16%	45%	8%	0%

Figure 3 Early Seral Patch Summary for TFL 48



REVISIONS

Canfor suggests that the monitoring procedure for this indicator be adjusted to show only early patch size at the FDP submission stage, as this is the management practice that will determine the size of future mature and old patches.

Canfor has initiated a Natural Disturbance / Fire Regime study. This work will form the basis for establishing Natural Disturbance frequencies, patterns and sizes and will be considered to set targets.

2.3 PROTECTED AREA BY SERAL STAGE

Indicator:	Objective:
3. Protected area by seral stage	We will identify seral stage distribution in Protected Areas within the TFL.

STATUS AND COMMENTS

The draft Management Plan 3 shows that currently there are 260 ha of early, 6,637 ha of juvenile, 5,247 ha of mature and 1,590 ha of old forest in Protected Areas within the TFL boundaries. A detailed summary of the seral stage distribution by Protected Areas is provided in the draft Management Plan 3.

The next review of seral stage by protected areas will be done in conjunction with Management Plan 4. It will represent forest conditions as of March 31, 2005. This analysis will occur in the spring of 2005.

REVISIONS

No revisions are suggested for this indicator or objective.

2.4 SPECIES AT RISK

Indicator:	Objective:
4. Number of forest dependent plant species, plant associations, fish and wildlife classified as threatened, endangered or vulnerable within the TFL	We will ensure no species is uplisted as a result of Canfor management activities within the TFL.

STATUS AND COMMENTS

Canfor first developed a list of species at risk in the TFL for Management Plan 2 in 1995; this list was updated in the draft Management Plan 3. This report represents the third time that formal reporting has occurred. For a complete list of species at risk the reader is directed to Management Plan 3.

Species at risk include those listed federally, provincially (red or blue) and as Identified Wildlife under the Forest Practices Code. Some species can appear on all three lists; for example, grizzly bear is listed federally as special concern (formerly referred to as vulnerable), blue-listed provincially and is Identified Wildlife under the Forest Practices Code. Others appear only on one list; Northern Goshawk for example, is listed only as Identified Wildlife.

The number of species at risk declined by 3 from 1999 to 2000. There were no changes to the status of fish at risk in the TFL. There are still 6 mammals listed at risk, but the northern population of caribou was uplisted from yellow to blue. There are still 15 bird species at risk but one of these, the Black-throated Green Warbler, was downlisted provincially from red to blue. The number of plant species at risk decreased by one; the boreal paintbrush (*Castilleja fulva*) was previously listed provincially as red, it is no longer listed. The number of plant associations at risk decreased by two, both associations were previously provincially blue listed and are no longer listed. The two plant associations were Subalpine Fir/Black Spruce/Labrador Tea, and Black Spruce/Black Huckleberry/Coltsfoot.

Table 4. Number of Species at Risk by Taxa for 1999 and 2000

Taxa	1999	2000
Mammals	6	6
Fish	2	2
Birds	15	15
Plants	22	21
Plant Associations	4	2
Total	49	46

The changes in status noted above were not a direct result of Canfor management practices but a result of more information being available for those species/species associations. For example, for the past 5 years there has been a substantial amount of songbird work in northeastern BC funded by Forest Renewal BC and other agencies. This inventory information has led to the downlisting of the Black-throated Green Warbler.

REVISIONS

No revisions are suggested for this indicator or objective.

2.5 HABITAT SUPPLY FOR INDICATOR SPECIES

Indicator:	Objective:
5. Habitat supply for indicator species	<p>5-1 We will ensure distribution of habitat for indicator species across the TFL.</p> <p>5-2 We will ensure sufficient furbearer habitat on a drainage-by-drainage basis exists to enable the maintenance of populations.</p>

2.5-1 Wildlife Models

STATUS AND COMMENTS

TEM based wildlife models have been developed for 10 species of wildlife (see draft Management Plan 3 and Glossary) and an additional 2 models (wolverine and Three-toed Woodpecker) had been completed in a draft format by the end of 2000.

Interim strategies to sustain wildlife habitat and minimize disturbance to wildlife were summarized in the draft Management Plan 3.

REVISIONS

No revisions are suggested for this indicator or objective.

2.5-2 Furbearer Habitat Availability

STATUS AND COMMENTS

Work on furbearer habitats will follow species habitat modeling outlined above.

REVISIONS

No revisions are suggested for this indicator or objective.

2.6 DISEASE TRANSMISSION TO SHEEP

Indicator:	Objective:
6. Disease transmission from domestic sheep grazing activities	No disease transmission from domestic sheep to wild sheep populations from domestic sheep use in Canfor activities.

STATUS AND COMMENTS

There has been no known transmission of disease from domestic sheep to wild sheep, up to December 31, 2000.

REVISIONS

No revisions are suggested for this indicator or objective.

2.7 COLLECTION AND USE OF REGISTERED SEED

Indicator:	Objective:
7. Collection and use of registered seed for coniferous planted species.	All seeds registered.

STATUS AND COMMENTS

100% of seeds grown to be planted within the TFL are registered in accordance with the Tree Cone, Seed and Vegetative Material regulation. Table 4 shows all trees and their source that Canfor planted on the TFL in 2000.

Table 5. Tree Seed Origin

Species	Seedlot	Number of Trees	Seed Class	Seed Worth	Seed Origin		
					Latitude	Longitude	Location
Pli	30779	204,500	B2		554500	1220000	Hulcross Creek - North
Pli	39505	117,180	B3		554000	1220500	Hulcross Creek - South
Pli	45715	262,950	B2		553000	1224000	Link Creek
Pli	45716	190,635	B2		550800	1210800	Wolverine River
Sw	33269	184,137	B2		561300	1220000	Farrell Creek
Sx	04140	190,251	B2		560100	1221900	Gaylard Creek
Sx	08778	4,860	B		552400	1220600	Brazion Creek
Sx	31310	504,814	B3		562800	1222900	Graham River
Sx	33268	148,010	B2		553900	1210500	Coldstream Creek
Sx	39501	532,555	B3		554000	1220500	Hulcross Creek - South
Sx	60118	300,995	A1	+18%	533700	1221300	Parsnip River
Total Trees Planted		2,640,887					

REVISIONS

No revisions are suggested for this indicator or objective.

2.8 INCIDENCE OF FIRE, WINDFALL INSECTS AND DISEASE

Indicator:	Objective:
8. Area and severity of incidence of fire, windfall, insects and disease	<p>8-1 We will minimize Non-Recoverable Losses to less than 10% of AAC based on a 10 year rolling average.</p> <p>8-2 We will salvage 90% of merchantable timber volumes within the THLB damaged by fire, windfall, insects and disease within 18 months of occurrence.</p>

2.8-1 Minimize Non-Recoverable Losses

STATUS AND COMMENTS

During 2000 the following incidence of fire, windfall, insects or disease have been noted on TFL 48. The following table summarizes incidence forest health issues and associated actions.

Table 6. Forest Health Incidence

Forest Health Factor	Incidence	Action
Fire	None	N/A
Insect		
Balsam Bark Beetle	Scattered light in Carbon, 11 Mile, LeMoray, and Burnt drainage's	<ul style="list-style-type: none"> • Ground surveys were conducted in the fall of 2000. • No salvage action is necessary at this time • Continue to monitor incidence and severity
Spruce Budworm	Scattered light to moderate defoliation noted in MoF district overview flight conducted in Fall 2000. 2 isolated areas of high defoliation in Dunlevy and back of Carbon drainages	<ul style="list-style-type: none"> • Concern that observers may have misclassified this incidence. Follow up scheduled for summer of 2001 with MoF Regional Entomologist.
Spruce Bark Beetle	3 locations noted in MoF overview flight. Boucher, Burnt, and Gulf Creek	<ul style="list-style-type: none"> • Light incidence, these areas will be followed up in 2001 to monitor incidence and severity. • No salvage action necessary
Forest Tent Caterpillar	Scattered levels of tent caterpillar noted during MoF overview flight in fall 2000	<ul style="list-style-type: none"> • No management action proposed. • Continue to monitor incidence and severity
Blowdown	626-004 ~60m ³ 610-001 ~100m ³ 326-002 ~150m ³ 245-001 ~60m ³	<ul style="list-style-type: none"> • No salvage proposed • Salvage completed spring 2001 • No salvage proposed • Permitted, waiting for harvest in adjacent area to salvage

Forest Health Factor	Incidence	Action
	316-002 ~500m ³	<ul style="list-style-type: none"> Permit and salvage 2001. Salvage blowdown in partial cut portion of block
	644-006 ~1,800m ³ 644-015 ~700m ³	<ul style="list-style-type: none"> Permit and salvage 2001. Adjacent to 232-003 Permitted, waiting for harvest coincident in the area. Fall/winter 2001. Adjacent to 303-002
Environmental Early snow event – August 2000	Incidental and scattered damage to young stands between 900 and 1100 m in elevation. Majority of damage to deciduous species	<ul style="list-style-type: none"> Unquantifiable, no action proposed.
Disease	None – Disease is typically slow to develop over a long period of time. Hence it is difficult to identify until stand level prescriptions are developed.	<ul style="list-style-type: none"> Continue to monitor and prescribe appropriate silviculture strategies at stand level.

REVISIONS

No revisions are suggested for this indicator or objective.

2.8-2 Salvage of Merchantable Timber Volumes

STATUS AND COMMENTS

Summary of salvage in blowdown is as follows:

Total blowdown	~3,370m ³	
Salvage (proposed/completed)	~3,160m ³	94%
No salvage proposed	~210m ³	6%

In areas where there is no salvage proposed this is due to the relatively small amounts of blowdown, in addition in one case a road has been deactivated making salvage uneconomic.

REVISIONS

No revisions are suggested for this indicator or objective.

2.9 PERCENT OF A HARVESTED AREA REFORESTED

Indicator:	Objective:
9. Percent of a harvested area that is reforested	We will reforest 100% of the net area to be reforested within 2 years of harvest on average.

STATUS AND COMMENTS

A review of silvicultural records was completed for the draft Management Plan 3, this review indicated that since January 1, 1995 the area weighted regeneration delay was 0.6 years.

The next review of regeneration delay will be done for Management Plan 4 in 2005 and will be based on performance through 2004.

REVISIONS

No revisions are suggested for this indicator or objective.

2.10 MINIMUM HARVEST AGE

Indicator:	Objective:
10. Minimum harvest age (as a surrogate for nutrient cycling)	Minimum harvest ages in years will be: Aspen 61, Cottonwood 61, Pine 81, Subalpine fir 81, Spruce 121 (based on leading species and average stand age).

STATUS AND COMMENTS

In the draft Management Plan 3 the minimum harvest age was set as the Regional Priority cutting age, as follows: Pine 101, Subalpine Fir 121, Spruce 141 and Aspen and Cottonwood. The next review of minimum harvest age will be done for the next Forest Development Plan submission. This is scheduled to be submitted before the end of 2001.

REVISIONS

No revisions are suggested for this indicator or objective.

2.11 WILDLIFE TREE PATCHES

Indicator:	Objective:
11. Wildlife tree patches	Wildlife tree patches will not be less than 8% of the harvested area, on average.

STATUS AND COMMENTS

In the draft Management Plan 3 it was reported that blocks harvested since 1995 had on average 17.6% in Wildlife Tree Patches.

The next review of Wildlife Tree Patches will be based on the 2001 Forest Development Plan submission.

REVISIONS

No revisions are suggested for this indicator or objective.

2.12 OLD GROWTH MANAGEMENT AREAS

Indicator:	Objective:
12. Old growth management areas	We will sustain old growth habitat values within the TFL.

STATUS AND COMMENTS

The draft Management Plan 3 presents a detailed analysis of the amount of available Old Growth currently available in the TFL. Old Growth Management Areas (OGMAs) will be identified by December 15, 2003. Canfor has initiated a preliminary process for identifying

potential OGMA's. See also Indicator 1.2 for 1960, 2000 and 2020 levels of old growth on the TFL.

REVISIONS

No revisions are suggested for this indicator or objective.

2.13 COARSE WOODY DEBRIS

Indicator:	Objective:
13. Coarse woody debris	We will maintain natural levels of coarse woody debris (CWD) across the TFL.

STATUS AND COMMENTS

Natural levels of Coarse Woody Debris (CWD) will be identified through Vegetation Resources Inventory (VRI) Phase II sampling to be conducted during the summer of 2001. First monitoring will be reported in June 2002.

Interim strategies to provide Coarse Woody debris were identified in the draft Management Plan 3.

REVISIONS

No revisions are suggested for this indicator or objective.

2.14 HABITAT CONNECTIVITY

Indicator:	Objective:
14. Habitat connectivity	Maintain an adequate level of habitat connectivity at landscape and stand levels with an emphasis on species dependent on mature forest or forest types (e.g., caribou and marten) recognizing that habitat connectivity may shift across the landscape.

STATUS AND COMMENTS

This indicator is linked to patch size and distribution (Indicator 2), please see Indicator 2 for progress to date.

Reporting on habitat connectivity is due by December 15, 2003.

REVISIONS

No revisions are suggested for this indicator or objective.

2.15 AREA OF THE TFL OCCUPIED BY PERMANENT ACCESS STRUCTURES

Indicator:	Objective:
15. Area of the TFL occupied by permanent access structures associated with forest management activities	We will limit impacts on the landbase due to the presence of permanent access structures to less than 3.5% of the gross landbase of the TFL.

STATUS AND COMMENTS

In the draft Management Plan 3 Canfor reported that currently there was 0.96% of the Gross TFL area in permanent access structures. We committed to conducting further analysis in relation to the 20 Year Plan. This analysis is complete. We anticipate, for the next 20 years, that an additional 1,924 km of access structures will be built, which will result in 1.69% of the Gross landbase in access structures, or 48% of the target objective. It is forecast that in 2020 that approximately 45% of the Timber Harvesting landbase will be within 300 m of a access structure.

In the draft Management Plan 3 Canfor committed that rehabilitated roads and landings recorded on hardcopy maps would be entered into its Forest Road Management System by December 31, 2000. Due to staffing changes this was not completed. It will be completed by June 30, 2001.

The next review of this indicator will be done in conjunction with Management Plan 4. It will represent road conditions up to the end of 2004. The analysis will occur in the spring of 2005.

REVISIONS

No revisions are suggested for this indicator or objective.

2.16 NUMBER OF REPORTABLE SPILLS

Indicator:	Objective:
16. Number of reportable spills entered into Incident Tracking System	We will minimize the number of reportable spills.

STATUS AND COMMENTS

There were no reportable spills entered into the Incident Tracking System for 2000.

The performance target for 2001 is zero spills reportable to regulatory authorities.

REVISIONS

No revisions are suggested for this indicator or objective.

2.17 USE OF ENVIRONMENTALLY FRIENDLY LUBRICANTS

Indicator:	Objective:
17. Use of environmentally friendly lubricants	We will research and identify environmentally friendly lubricants by March 1, 2001.

STATUS AND COMMENTS

The corporate EMS representative is compiling a report on the usage of environmentally friendly lubricants. The only substantial advantage they have over conventional lubricants is that they are biodegradable. Issues such as performance during winter conditions, warranty coverage and toxicity in watercourses restrict the usage of these lubricants in our operations.

Canfor suggests that we continue to focus on effective spill preparedness and containment measures rather than assuming non-conventional lubricants reduces our need to be prepared.

REVISIONS

Canfor suggests closing this indicator.

2.18 SOIL PRODUCTIVITY MEASURES

Indicator:	Objective:
18. Soil productivity measures	We will use site index measures based on BEC zone to confirm the predicted long-term soil productivity.

STATUS AND COMMENTS

The current status for site index measures at free growing is shown in Table 6. The site index reported is the area weighted site index for each species by site series. The amount of area that has been declared free growing has increased from 1,599 ha to 3,628 ha. The majority of this area is attributable to backlog areas within the TFL. Due to the age and quality of the site series mapping for these old blocks, site series was derived from the new site series mapping covering the whole TFL. This has shown considerably more site series than was reported in the draft management plan.

In the draft management plan first reporting on this indicator showed that pine on the SBSwk2 01 site series was below the variance level. The new analysis shows that this site series is now within the tolerance and 3 other site series combinations are below the tolerance. These site series are highlighted in the following table. Several factors may influence this including adverse brush and competition on the site. This indicator will continue to be monitored to determine ongoing trends.

Table 7. Average Site Index by Leading Species

Average Site Index (BHA50)		Leading Species					
BEC	Site Series	Subalpine Fir		Spruce		Lodgepole Pine-Interior	
		Actual	Predicted	Actual	Predicted	Actual	Predicted
BWBSmw1	01	21.0	N/A	16.8	15.0	15.5	18
	02	-	-	17.9	9.0	15.0	12
	03	21.0	N/A	18.0	15.0	15.0	18
	04	-	-	18.0	12.0	-	-
	05	-	-	18.0	18.0	18.0	18
	06	-	-	18.0	18.0	-	-
	07	-	-	-	-	18.0	18
BWBSmw1 Ave SI		21.0	-	17.4	-	15.3	-
BWBSwk1	01	13.8	N/A	19.0	12.0	15.0	15
	02	-	-	21.0	9.0	15.0	12
	03	15.0	N/A	16.1	9.0	15.0	12
	04	15.0	N/A	16.8	12.0	15.0	15
	05	15.0	N/A	15.1	15.0	-	-
	06	15.0	N/A	15.0	15.0	-	-
	07	-	-	15.0	9.0	-	-
	08	-	-	15.0	6.0	-	-
BWBSwk1 Ave SI		14.1	-	18.2	-	15.0	-
SBSwk2	01	15.8	15.0	18.0	18.0	20.8	21
	02	16.3	12.0	19.1	15.0	21.0	15
	03	15.6	12.0	18.8	18.0	20.1	18
	04	15.4	N/A	17.9	15.0	21.0	18
	05	16.3	18.0	18.7	21.0	20.3	21
	06	14.7	18.0	17.4	24.0	19.8	21
	07	18.8	N/A	17.9	N/A	20.1	N/A
SBSwk2 Ave SI		15.6	-	18.4	-	20.5	-
ESSFmv2	01	13.8	12.0	16.3	15.0	21.0	15
	02	-	-	14.1	9.0	-	-
	03	12.0	6.0	-	-	21.0	9
	04	15.0	15.0	17.9	15.0	-	-
ESSFmv2 Ave SI		13.8	-	16.1	-	21.0	-
ESSFwk2	01	15.1	15.0	16.7	15.0	20.3	N/A
	02	15.0	9.0	16.7	9.0	20.4	N/A
	03	14.6	12.0	15.3	12.0	-	-
	04	15.3	15.0	16.2	15.0	-	-
	05	16.8	15.0	17.7	15.0	-	-
	06	-	-	16.0	12.0	15.0	N/A
ESSFwk2 Ave SI		15.1	-	16.6	-	20.2	-
ESSFwc3	01	15.0	15.0	-	-	-	-
	02	14.0	9.0	-	-	-	-
	03	14.3	15.0	-	-	-	-
ESSFwc3 Ave SI		14.8	-	-	-	-	-

REVISIONS

No revisions are suggested for this indicator or objective.

2.19 SOIL DEGRADATION

Indicator:	Objective:
19. Soil degradation	We will not exceed site degradation guidelines.

STATUS AND COMMENTS

All areas in which harvesting commenced in 2000 were within the prescribed allowable limits for site degradation.

Table 8. Blocks Harvested in 2000 Within Site Degradation Guidelines

Licence	Cut Block	Silviculture Prescription within Site Degradation Guidelines	Harvesting Consistent with Silviculture Prescription Site Degradation Limits
TFL48	236-001	Yes	Yes
TFL48	236-004	Yes	Yes
TFL48	236-005	Yes	Yes
TFL48	236-006	Yes	Yes
TFL48	237-001	Yes	Yes
TFL48	237-002	Yes	Yes
TFL48	246-003	Yes	Yes
TFL48	246-004	Yes	Yes
TFL48	247-004	Yes	Yes
TFL48	273-001	Yes	Yes
TFL48	318-005	Yes	Yes
TFL48	612-001	Yes	Yes
TFL48	615-005	Yes	Yes
TFL48	619-004	Yes	Yes
TFL48	620-001	Yes	Yes
TFL48	634-001	Yes	Yes
TFL48	634-003	Yes	Yes
TFL48	634-004	Yes	Yes
TFL48	634-005	Yes	Yes
TFL48	634-006	Yes	Yes
TFL48	689-001	Yes	Yes
TFL48	689-004	Yes	Yes
TFL48	689-005	Yes	Yes
TFL48	725-006	Yes	Yes
TFL48	725-007	Yes	Yes

REVISIONS

No revisions are suggested for this indicator or objective.

2.20 SEEDLING GROWTH OR ESTABLISHMENT

Indicator:	Objective:
20. Seedling growth or establishment	We will meet Free Growing requirements within Silviculture Prescriptions.

STATUS AND COMMENTS

The current status of free growing stands is shown in the following table. The backlog area of free growing stands has increased by 1,958 ha. NSR Area harvested under TFL 48 has decreased by 902 ha and free growing has increased by 71 ha. No areas are past the Free to Grow deadline in approved silviculture prescriptions.

Table 9. Free to Grow Status as of April 2001

	Licence				
	Backlog Areas (Pre 1987)	TFL48 (1987- 2001)	SBFEP (1985 -1998)	PA13 (1990-1999)	Grand Total
Avg. Logged (ha/yr)	N/A	979	159	44	-
Total Area Logged to Date	12,884	14,686	2,073	394	30,037
Area NSR (ha)	380	967	159	186	1,692
Area Not FTG	9,336	14,615	2,064	394	26,409
Area FTG	3,548	71	9	0	3,628
Area Past FTG Date	N/A	0	0	0	0

Source: Canfor Genus Report (April 2001) – Silviculture Current Status and VRI data for SBFEP and PA 13

REVISIONS

No revisions are suggested for this indicator or objective.

2.21 SOIL DISTURBANCE SURVEYS

Indicator:	Objective:
21. Soil disturbance surveys	We will not exceed soil disturbance limits within cutblocks.

STATUS AND COMMENTS

All areas in which harvesting and silviculture activities commenced in 2000 were within the allowable soil disturbance limits.

See list of blocks referenced in Indicator 19.

REVISIONS

No revisions are suggested for this indicator or objective.

2.22 AREA IN CUTBLOCK MANAGED AS RRZ OR RMZ

Indicator:	Objective:
22. Area in cutblock managed as Riparian Reserve Zone or Riparian Management Zone by appropriate stream, lake or wetland classification	We will meet or exceed appropriate riparian measures as recommended by the Forest Practices Code Riparian Guidebook.

STATUS AND COMMENTS

Management Plan 3 describes a comprehensive approach for accounting for riparian net downs across the landbase. The annual reports provide a current status for riparian reserve and management zones for rivers, streams, lakes and wetlands each year (Table 9). In 2000 cutblocks were only harvested near rivers and streams.

Table 10. Summary of Riparian Reserve and Management Zones in 2000

Stream, Wetland or Lake Class	Stream Length (m)	Reserve Zone Width (m)	Mgmt Zone Width (m)	Total Riparian Area Managed (ha)	RMZ Percent Retention (Area Weighted)
S2 (n=2)	2,200	30	20	11.0	81%
S3 (n=1)	350	20	20	2.1	100%
S4 (n=1)	1,700	0	30	5.1	20%
S6 (n=19)	13,750	0	20	44.0	14%
Totals	19,650	-	-	62.2	-

REVISIONS

No revisions are suggested for this indicator or objective.

2.23 AREA OF A STREAM AFFECTED BY HARVESTING AND ROAD CONSTRUCTION

Indicator:	Objective:
23. Area of a stream affected by timber harvesting and road construction	<p>23-1 We will identify hazard indices through watershed assessment procedures as necessary.</p> <p>23-2 We will identify watercourses and hazards to watercourses as they arise.</p>

2.23-1 Hazard Indices

STATUS AND COMMENTS

No new IWAPs have been requested by MELP or MoF.

REVISIONS

No revisions are suggested for this indicator or objective.

2.23-2 Watercourses and Hazards to Watercourses

STATUS AND COMMENTS

A variety of prescriptions and works are planned and in progress (Table 10).

Table 11. Ongoing and Planned Watershed Restoration Works for 2000 and 2001

Road Name (km)	Creek	Prescription	Restoration	Works
Burns Road (17)	Seven Mile	Report Complete	Road Fill slump	Pending Prescription
Club Creek (6.5)	Club	Complete	Road Fill Slump	Summer 2001
Hasler (22)	Tribs to Hasler	No field work done	Backwater Culverts (fish barrier)	Summer 2001
Johnson FSR (35)	Track	Complete	Road Fill Slump	Summer 2001
Johnson FSR (36)	Track	Complete	Road Fill Slump	Summer 2001
Perry Ck.	Perry	N/A	Pull Bridges	Summer 2001
Upper Burnt Road (28)	Upper Burnt River	No field work done	Road Fill Slump	Pending Prescription
Table Creek (0.5)	Gaylard	Complete	Road Cut Slump	In Progress
Table Creek (1.5)	Gaylard	Complete	Road Cut/Fill Slump	Completed Summer 2000
Table Creek (12)	Table Creek	Field work complete	Road Cut/Fill Slump	Pending Prescription
Table Creek (24.5)	Trib. to Williston lake	Report Complete	Road Cut Slump	Pending Prescription
Tentfire Creek (9)	Tentfire	Complete	Road Cut/Fill Slump	Summer 2001

REVISIONS

No revisions are suggested for this indicator or objective.

2.24 SEDIMENT LEVELS

Indicator:	Objective:
24. Sediment levels	We will ensure that sedimentation due to harvesting and road building activities falls within acceptable limits.

STATUS AND COMMENTS

Canfor has met with BC Environment officials and independent consultants to discuss appropriate methodologies for measuring this objective. Canfor has identified 3 methodologies for monitoring which it wishes to discuss with the PAC, these methodologies and the strengths and weaknesses of each are outlined in Table 12.

Table 12. Potential Sediment Monitoring Methodologies

Monitoring Methodology	Pros	Cons
Continuous monitoring of 1 watershed in each of TFL 48 and Ft. St. John timber supply area	<ul style="list-style-type: none"> Excellent in stream data over 4-5 years. 	<ul style="list-style-type: none"> Limited to very few watersheds. Hard to apply to other watersheds. Expensive.
Stream Crossing Quality Index and Gravel Buckets	<ul style="list-style-type: none"> Covers many watersheds and different crossing structures through index. Provides limited in-stream data on sediment. Cost effective. 	<ul style="list-style-type: none"> Provides only limited in-stream data on sediment.

Monitoring Methodology	Pros	Cons
Stream Crossing Quality Index for TFL Block 2	<ul style="list-style-type: none"> Covers many watersheds and different crossing structures. Very cost-effective 	<ul style="list-style-type: none"> No in-stream data.

REVISIONS

Based on input from the PAC Canfor is planning to proceed with continuous monitoring in the Fort St. John Forest District and the Stream Crossing Quality Index in Block 2 of the Tree Farm Licence.

2.25 STREAM FLOWS

Indicator:	Objective:
25. Stream flows	We will design forest management activities to minimize impact on stream flow.

STATUS AND COMMENTS

Existing information for this indicator will be determined by September 30, 2001.

REVISIONS

No revisions are suggested for this indicator or objective.

2.26 FOREST HEALTH

Indicator:	Objective:
26. Forest health	We will minimize Non-Recoverable Losses to less than 10% of AAC based on a 10 year rolling average.

STATUS AND COMMENTS

See Indicator 8.

REVISIONS

This indicator is a complete duplication of Indicator 8. Canfor proposes to delete Indicator 26 and continue to track Indicator 8.

2.27 ALLOWABLE ANNUAL CUT

Indicator:	Objective:
27. Allowable Annual Cut	We will ensure that the allowable annual cut will not adversely impact Long Term Harvest Level.

STATUS AND COMMENTS

The Timber Supply Analysis has been completed and submitted to the Ministry of Forests. In the Management Plan that will be submitted in 2001, Canfor will propose an AAC that will not adversely impact the Long Term Harvest Level.

REVISIONS

No revisions are suggested for this indicator or objective.

2.28 SAWMILL LRF, CRF AND SHIPMENT OF MINI-CHIPS

Indicator:	Objective:
28. Sawmill Lumber Recovery Factor, Chip Recovery Factor and shipment of mini-chips	We will target an annual range of 246 - 252 fbm/m ³ , 0.15 BDU/m ³ and 60,000 tonnes/year respectively.

STATUS AND COMMENTS

Sawmill performance in 2000 was slightly below that of 1999 but, with the exception of minichip shipments, within the target range (Table 12). The shipment of minichips to Fletcher Challenge's Pulpmill in Mackenzie dropped 45% this was the result of a poor pulp markets (decreased demand) and reduced production of minichips (decreased supply).

Table 13. Summary of Lumber Recovery Targets for 1999 and 2000

Measure (Target)	1999	2000
Lumber Recovery Factor (247-252 fbm/m ³)	250 fbm/m ³	248 fbm/m ³
Chip Recovery (0.145-0.155 BDU/ m ³)	0.150 BDU/ m ³	0.160 BDU/ m ³
Minichip shipments (50-70,000 tonnes/year)	60,000 tonnes/year	33,000 tonnes/year

REVISIONS

No revisions are suggested for this indicator or objective.

2.29 HARVEST LEVELS / VOLUMES

Indicator:	Objective:
29. Harvest levels/volumes	We will achieve periodic cut control within 10% of target, over 5 years.

STATUS AND COMMENTS

Volumes harvested by year since 1987 are summarized in Table 13. There is one year left in the current Periodic Cut Control period (1997-2002).

Table 14. Actual Recorded and Allowable Annual Cut Summary

Year	Allowable Annual Cut (m ³)	Adjustment (m ³)	Actual Recorded Cut (m ³)	Cut Control (%)
1987	348,500.0		319,871.0	91.8
1988	348,500.0		277,930.0	79.8
1989	348,500.0		183,330.0	52.6
1990	348,500.0		456,600.0	131.0
1991	348,500.0		555,001.0	159.3
Subtotal	1,742,500.0		1,787,732.0	102.6
1992	348,500.0	-8,315.0	280,820.0	82.5
1993	348,500.0	-8,315.0	389,447.9	114.5
1994	348,500.0	-8,314.0	284,526.6	83.6
1995	348,500.0	-8,314.0	313,409.0	92.1
1996	348,500.0	-8,314.0	391,717.0	115.1
Subtotal	1,742,500.0	-41,572.0	1,659,920.5	97.6
1997	401,370.0	16,516.0	343,587.6	82.2
1998	401,370.0	16,516.0	435,088.2	104.1
1999	401,370.0	16,516.0	532,574.3	127.4
2000	401,370.0	16,516.0	302,668.0	72.4

Source: MoF Annual Cut Control Letters (1987-2000)

For the period April 1999-March 2000 the SBFEP harvested 35,354 m³ and for the period April 2000-March 31, 2001 they harvested 50,068 m³. For these 2 years the SBFEP has harvested under their 55,350 m³ annual apportionment.

REVISIONS

No revisions are suggested for this indicator or objective.

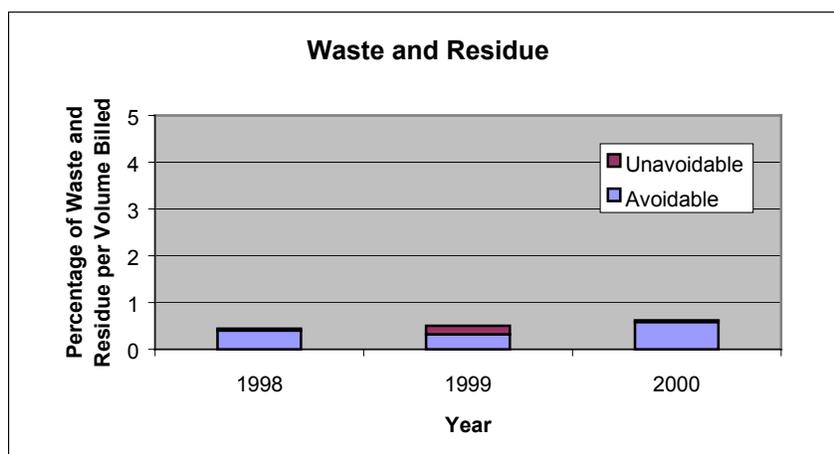
2.30 WASTE

Indicator:	Objective:
30. Waste	We will assess all waste volumes for harvested blocks and report annually.

STATUS AND COMMENTS

In 2000, 0.62% of the total volume billed was attributable to waste and residue volumes.

Figure 4 Summary of Waste and Residue 1998 - 2000



REVISIONS

Targets for waste will be determined in conjunction with setting coarse woody debris (Indicator 13) objectives.

2.31 TIMBER HARVESTING UTILIZATION STANDARDS

Indicator:	Objective:
31. Timber harvesting utilization standards	We will meet or exceed timber utilization standards of 1999 (i.e., 4 inch tops).

STATUS AND COMMENTS

Timber harvesting utilization levels were discussed at the 8th PAC meeting on December 7, 2000. The top size diameter limit has been varied due to severe economic conditions.

From May 1, 2000 to April 30, 2001 approximately 8.4% of the total log volumes were optional grades of timber. This is up slightly from the previous year (8%).

REVISIONS

No revisions are suggested for this indicator or objective.

2.32 AREA OF FORESTED LAND

Indicator:	Objective:
32. Area of forested land	<p>32-1 We will track, monitor and project losses to other uses and incorporate these losses in to AAC calculations every 5 years.</p> <p>32-2 We will notify MEM and OGC of objective for oil and gas, mining tenure holders to reforest, within operable forest areas, to MoF standards inactive mines, well sites, pipelines and reclaimed roads within 2 years of becoming inactive.</p>

2.32-1 Track and Project Losses

STATUS AND COMMENTS

The next review of area of forested land will be done in conjunction with Management Plan 4. It will represent forest conditions as of March 31, 2005. This analysis will occur in the spring of 2005.

REVISIONS

No revisions are suggested for this indicator or objective.

2.32-2 Notify MEM and OGC

STATUS AND COMMENTS

Canfor notified the Ministry of Energy and Mines (MEM) and the Oil and Gas Commission (OGC) of our goal for reforestation of inactive sites on January 8, 2001. MEM responded on January 30, 2001.

Canfor receives referrals for oil and gas and other activities from proponents and comments on those referrals. Where appropriate Canfor suggests reforestation or avoidance measures to other industrial proponents.

REVISIONS

Canfor suggests that the referral process and tracking of losses every 5 years is sufficient to account for non-forestry losses to the land base and that this sub-objective is now complete and can be deleted from the matrix.

2.33 INVESTMENT IN NEW TECHNOLOGY, CAPITAL MAINTENANCE AND CONSTRUCTION

Indicator:	Objective:
33. Average investment in new technology, capital maintenance and construction at Canfor operations in Chetwynd	We will invest \$2.5 million annually based on a 10 year rolling average, in new technology, capital maintenance and construction.

STATUS AND COMMENTS

Average investment for the last 2 reporting periods has been higher than the \$2.5 MM target (Table 14).

Table 15. Annual Average Investment

10 Year Period (Rolling)	Average Annual Investment
1990-1999	\$4.0 MM
1991-2000	\$4.3 MM

REVISIONS

No revisions are suggested for this indicator or objective.

2.34 ECONOMIC CONTRIBUTION TO LOCAL COMMUNITIES AND CONTRACTORS

Indicator:	Objective:
34. The economic contribution that Canfor Chetwynd makes to local communities and contractors	<p>34-1 We will report annually on the economic indices that reflect Canfor's contribution to local communities and contractors, and jobs per cubic metre.</p> <p>34-2 We will provide contracting opportunities that support local employment where the skills exist.</p>

2.34-1 Local Economic Indices

STATUS AND COMMENTS

This is the second year that this indicator has been measured. In the year 2000 there was a 28% drop in local contracted services, a 53% drop in non-local contracted services and 29% drop in supplies. Other indices were relatively constant (Table 15).

The index "Jobs/ m³" increases despite other downward trends because of the fixed cost of maintaining and running the sawmill.

Table 16. Canfor's Contribution to Local Communities

Index	Amount (\$MM) 1999	Amount (\$MM) 2000
Property Taxes	0.3	0.3
Salary Wages and Benefits	13.3	13.8
Contract Services (Local)	23.1	16.7
Contract Services (Non-local)	13.5	6.4
Supplies	2.4	1.7
Community Donations	0.008	0.10
Jobs/m ³	1.39/1000 m ³	1.82/1000 m ³

The number of jobs/m³ is calculated as follows:

(Total Wages/Average Provincial Wage)/Actual Recorded Cut

Where:

Total wages = Salaries, Wages and Benefits + Local Contractors + Non-local Contractors

Average Provincial Wage = This is based on Pricewaterhouse Coopers Annual Report on the Forest Industry in British Columbia. In 1999 the provincial average forest industry employee earned \$67,042.

Actual Recorded Cut = Indicator 29

REVISIONS

No revisions are suggested for this indicator or objective.

2.34-2 Local Contractors

STATUS AND COMMENTS

The percentage of local contractors in Canfor's Peace Region approved contractor database dropped from 71% in 1999 to 68% in 2000. There was no net loss of local contractors but a net increase in non-local contractors (3%) to account for the annual variation.

REVISIONS

No revisions are suggested for this indicator or objective.

2.35 ANIMAL UNIT MONTHS

Indicator:	Objective:
35. Animal unit months	We will maintain an annual average of 1000 Animal Unit Months (excludes brush control by sheep).

STATUS AND COMMENTS

In draft Management Plan 3 approximately 4,936 AUM's were reported to be within the TFL. These AUM's were represented by range tenures issued by the Ministry of Forests that overlapped the TFL and included area outside of the TFL. Since that time Canfor has completed the analysis to show that there are approximately 2,503 AUM's directly attributable to the TFL (Table 16).

The methodology to derive this was to simply prorate by area the number of AUM's attributable to the TFL.

Table 17. Animal Unit Months on TFL 48

Grazing Tenure	Total AUM's	% Area TFL	AUM's TFL
Grazing Lease	10	100.0%	10.0
RAN071469	161	98.9%	159.2
RAN071476	254	11.3%	28.7
RAN071818	148	99.6%	147.4
RAN072880	20	92.2%	18.4
RAN073021	944	58.2%	549.2
RAN073876	1080	34.9%	376.9
RAN074239	50	50.0%	25.0
RAN074307	240	40.2%	96.5
RAN074323	16	50.0%	8.0
RAN074778	480	100.0%	480.0
RAN074779	120	100.0%	120.0
RAN074781	280	100.0%	280.0
RAN074782	204	100.0%	204.0
Total			2,503.3

REVISIONS

No revisions are suggested for this indicator or objective.

2.36 VISUAL LANDSCAPE INVENTORY

Indicator:	Objective:
36. Visual Landscape inventory	We will maintain and update an approved visual landscape inventory.

STATUS AND COMMENTS

A new Visual Landscape Inventory was completed in 2000. This inventory has not had Visual Quality Objectives defined for it at this time. When this process is completed the District Manager will make the objectives known under the Forest Practices Code of British Columbia Act. It is expected that this will happen in 2001.

REVISIONS

No revisions are suggested for this indicator or objective.

2.37 LEVEL OF PUBLIC ACCEPTANCE

Indicator:	Objective:
37. Level of public acceptance of Visual Landscape inventory	<p>37-1 We will include public input in reviewing and updating the visual landscape inventory.</p> <p>37-2 We will propose and manage harvesting cutblocks consistent with Visual Sensitivity Classes.</p>

2.37-1 Visual Landscape Inventory Public Input

STATUS AND COMMENTS

One comment was received from the public that concerned visual management during 2000. This was a general inquiry concerning block T4010 along the Tumbler highway near Gwillim Creek. The block is designed as a strip harvest system over 3 to 4 passes in the next 100 years with approximately 39 of 212 ha being harvesting in the first pass. No changes were required to the Visual Landscape Inventory.

REVISIONS

No revisions are suggested for this indicator or objective.

2.37-2 Visual Impact Assessments

STATUS AND COMMENTS

Requirements for landscape design and perspective modeling is identified at each forest development plan.

Reporting performance for this indicator identified all blocks which had harvesting start between January 1 and December 31, 2000. Then these blocks were compared with the 1995 Visual Landscape Inventory (VLI) and the 2000 Visual Landscape Inventory.

Table 17 shows all blocks where harvesting started in 2000. Those highlighted fall within either the 1995 or 2000 VLI. All blocks in a visual area have had visual impact assessments completed except blocks 247-004 and 273-001. These two blocks are outside the 1995 visual areas but within the 2000 visual areas and had cutting permits issued on August 1, 1998 and May 15, 1998 respectively, hence with the best available information at the time a visual impact assessment was not required.

All blocks in visual areas have post harvest visual assessments scheduled to ensure that the plans have achieved the desired results.

Table 18. Blocks Harvested in 2000 with VIA Requirements

Licence	Cut Block	Visual Impact Assessment	Harvesting Consistent with VIA
TFL48	236-001	Done	Yes – Not Visible
TFL48	236-004	Done	Yes
TFL48	236-005	Done	
TFL48	236-006	Done	
TFL48	237-001	Done	Yes – Not Visible
TFL48	237-002	Done	
TFL48	246-003	Not Required	
TFL48	246-004	Not Required	
TFL48	247-004	Not Required	N/A
TFL48	273-001	Not Required	N/A
TFL48	318-005	Not Required	
TFL48	612-001	Not Required	
TFL48	615-005	Not Required	
TFL48	619-004	Not Required	
TFL48	620-001	Not Required	
TFL48	634-001	Not Required	
TFL48	634-003	Not Required	
TFL48	634-004	Not Required	
TFL48	634-005	Not Required	
TFL48	634-006	Not Required	
TFL48	689-001	Done	Scheduled
TFL48	689-004	Done	Scheduled
TFL48	689-005	Done	Scheduled
TFL48	725-006	Not Required	
TFL48	725-007	Not Required	

REVISIONS

No revisions are suggested for this indicator or objective.

2.38 BACK COUNTRY CONDITION

Indicator:	Objective:
38. Back country condition	We will maintain or increase backcountry condition in Klin Se Za, Bocock, Butler Ridge, Pine LeMoray, Peace Boudreau, and Elephant Ridge/Gwillim Protected Areas and manage special management zones (Klin Se Za, North Burnt, Dunlevy) as per LRMP.

STATUS AND COMMENTS

Canfor had activities within two of the backcountry areas described in the draft management plan. These activities are shown in Table 18.

Table 19. Canfor Activity within Backcountry Areas in 2000

PAS / SMZ	Activity
Dunlevy SMZ	Reconstruction of ~2 km of Rd 27506.100
	Construction of ~2 km of new Rd 27506.100
	Seasonal deactivation on reconstruction and new construction
North Burnt SMZ	Maintenance of deactivation measures on Rd 72609.100 up to 5.1 km

These activities are consistent with the direction provided for activities within the SMZ's.

REVISIONS

Canfor suggests that the following amendment be made to this indicator for the acceptable variance.

Acceptable Variance: There will be no additional permanent loss of Semi-Primitive ROS due to Canfor management.

New road construction will be open for the duration of the season in which the forest management activity occurs (eg. road construction, harvesting, primary silviculture). Seasonal deactivation and access restrictions will be completed by the end of the active season. Upon completion of primary silviculture activities (planting) the road will be deactivated and motorized access restricted.

Access management and deactivation can be used as tools to achieve the desired ROS classification (see Appendix 2 for definition of ROS classes).

Canfor may use roads developed and maintained by other non-forest industry industrial users (eg. oil/gas, mining). If Canfor assumes responsibility for the road due to no other industrial user having long term interests in the road then it will be assessed as a change in ROS attributable to forest management activities.

Currently, work is underway to create a plan for managing the Dunlevy SMZ. When the LRMP working group has completed this plan and government endorses it then this indicator may need to be amended to ensure that it is consistent with the Dunlevy SMZ Plan.

2.39 BOTANICAL FOREST PRODUCTS

Indicator:	Objective:
39. Habitat supply for botanical forest products	We will investigate local uses of botanical forest products to determine habitat requirements.

STATUS AND COMMENTS

Canfor's knowledge of botanical forest product use in the TFL is currently based on anecdotal information. At present there is no large-scale commercial use of botanical forest products in the TFL. Current uses include gathering of berries, medicinal plants and possibly such features as mushrooms and tree burls by both the public and Aboriginal people.

In an effort to better determine how botanical forest products are used on the TFL, Canfor solicited information through newspaper advertisements in March 2001 and through meetings in relation to the Klin Se Za Special Management Zone.

No response was received in relation to the newspaper advertisements. West Moberly First Nations initiated a proposal to determine the presence of medicinal plants in the Klin Se Za area however, no specific information in regards to plant use was brought forward.

REVISIONS

Since no specific information has been brought forward to date Canfor will require additional time to work with West Moberly First Nations to better determine plant habitat requirements. Canfor suggests that habitat requirements be completed by June 30, 2002 instead of June 2001 as originally suggested. This change was accepted by the PAC.

2.40 PUBLIC ADVISORY COMMITTEE

Indicator:	Objective:
40. Public Advisory Committee	<p>40-1 We will establish and maintain a Public Advisory Committee and hold at least two meetings annually.</p> <p>40-2 We will hold an annual open house to review SFM plan performance.</p>

2.40-1 Public Advisory Committee

STATUS AND COMMENTS

Canfor held eight meetings with the Public Advisory Committee in 2000 (Table 19). The high number of meetings was a result of developing initial information for the CSA Matrix.

Table 20. Summary of Meeting Dates, Committee, Advisors and Public Attendance

Meeting #	Date	# of Committee Members	Quorum	# of Advisors	# of Public
1	Feb. 4, 2000	4	Yes	4	0
2	Mar. 7, 2000	5	Yes	5	0
3	Mar. 30, 2000	4	Yes	4	2
4	Apr. 13, 2000	8	Yes	4	0
5	Apr. 26, 2000	7	Yes	5	0
6	May 18, 2000	7	Yes	6	0
7	Sept. 21, 2000	5	Yes	5	3
8	Dec. 7, 2000	4	No	8	3

The Committee was composed of the following interests in 2000:

Communities, Environment, Forest Workers, Independent Forest Operators, Oil and Gas, Recreation and Trapping.

Both Saulteau and West Moberly First Nations were invited to attend each meeting but they did not attend.

REVISIONS

No revisions are suggested for this indicator or objective.

2.40-2 Annual Open House

STATUS AND COMMENTS

The first annual open house was held on Friday, September 22, 2000. A forestry technician class from Northern Lights College attended the Open House. The class instructor wrote a letter complimenting Canfor on its use of technology. No other members of the public attended the Open House.

The next Open House is scheduled for Thursday, May 10, 2001.

REVISIONS

No revisions are suggested for this indicator or objective.

2.41 PARTICIPATION IN LRMP

Indicator:	Objective:
41. Participation in LRMP	We will attend meetings, and provide information as required, for LRMP functions.

STATUS AND COMMENTS

Canfor has attended 100% of all LRMP related meetings scheduled in 1999 (2) and 2000 (4). In 2000 there were 3 meetings related to the Dunlevy Special Management Zone and 1 meeting related to the Klin Se Za Special Management Zone.

REVISIONS

No revisions are suggested for this indicator or objective.

2.42 LRMP AND LAND USE PLANS

Indicator:	Objective:
42. LRMP and land use plans	We will manage operations to the spirit and intent of the Dawson Creek LRMP.

STATUS AND COMMENTS

The 2000 Forest Development Plan has been approved and includes wording regarding the spirit and intent of the Dawson Creek LRMP. Canfor continues to work and report on items of the LRMP such as Protected Areas (Indicator 3), Special Management Zones (Indicators 38 and 41) and wildlife species (Indicators 4 and 5).

REVISIONS

No revisions are suggested for this indicator or objective.

2.43 PROACTIVE CONSULTATION PROCESS

Indicator:	Objective:
43. Proactive consultation process for significant activities such as proposed timber harvesting	Forest Development Plan will be referred to Saulteau and West Moberly First Nations.

STATUS AND COMMENTS

The 2000 to 2005 Forest Development Plan was referred to both First Nations. Correspondence and meetings between Canfor and the First Nations spans the period from 1999 to 2001. Concerns were raised by the First Nations regarding harvesting in the Lebleu and Medicine Woman Creek areas north of Moberly Lake. West Moberly First Nations refers to this area as the "George Weeksa" area. Canfor has committed to not pursuing Cutting Permit applications in the LeBleu Creek area pending the completion of a Treaty Land Entitlement (TLE) process and to having further discussions with West Moberly and Saulteau First Nations in the Medicine Woman Creek area.

REVISIONS

No revisions are suggested for this indicator or objective.

2.44 ARCHAEOLOGICAL IMPACT ASSESSMENTS

Indicator:	Objective:
44. Archaeological impact assessments on proposed harvest blocks	We will conduct archaeological impact assessments as indicated through archaeological overviews or inventory.

STATUS AND COMMENTS

Canfor completed both pre and post impact archaeological impact assessments in the 2000 field season. The post-impact assessments found no archaeological resources (Landsong Heritage Consulting, Permit 2000-287). The pre-impact assessments determined that potential Culturally Modified Trees (CMTs) identified by Canfor in cutblocks 239-3 and T2011 were not CMTs. The archaeologist identified blazed trees created 1944 or later in T2010 (Landsong Heritage Consulting, Permit 2000-272). Sites younger than 1846 are not protected under the Heritage Act.

If possible the blazed trees will be incorporated into a reserve however a decision regarding these trees will be made after further field work, likely in 2002.

REVISIONS

No revisions are suggested for this indicator or objective.

2.45 ABORIGINAL LIAISON

Indicator:	Objective:
45. Aboriginal liaison	We will increase the level of aboriginal input to forest management by meeting with band councils, representatives, contractors and/or individuals as issues and opportunities arise.

STATUS AND COMMENTS

Canfor has participated in meetings with both Saulteau and West Moberly First Nations in 1999 and 2000 (Table 20). West Moberly First Nations has also attended meetings in regards to the Dunlevy and Klin Se Za Special management zones. These meetings are tracked as part of Indicator 41.

Table 21. Number of Meetings Held with First Nations Annually

First Nation	1999	2000
Saulteau	1	1*
West Moberly	2	1

* Chief and Council did not attend a meeting on Nov. 30, 2000 but trappers from Saulteau did.

REVISIONS

No revisions are suggested for this indicator or objective.

2.46 INCORPORATE OBJECTIVES OF KLIN SE ZA INTO FDP AND MP

Indicator:	Objective:
46. Incorporate objectives of Klin Se Za into FDP and MP	We will maintain or increase backcountry condition in Klin Se Za, Bocoock, Butler Ridge, Pine LeMoray, Peace Boudreau, and Elephant Ridge/Gwillim Protected Areas and manage special management zones (Klin Se Za, North Burnt, Dunlevy) as per LRMP.

STATUS AND COMMENTS

See Indicator 38.

REVISIONS

No revisions are suggested for this indicator or objective.

2.47 ABORIGINAL EMPLOYMENT

Indicator:	Objective:
47. Aboriginal employment	We will budget \$100,000 annually for aboriginal contractors.

STATUS AND COMMENTS

In 1999 aboriginal contractors conducted approximately \$465,000 worth of forestry work, this declined slightly to \$447,988 in 2000, both years are well above the objective.

REVISIONS

No revisions are suggested for this indicator or objective.

2.48 FDP, PMP AND MP

Indicator:	Objective:
48. FDP, PMP AND MP	We will advertise and refer plans to all parties in a proactive manner (public, agencies and other licence holders).

STATUS AND COMMENTS

Public participation in the Management Plan process is summarized in Indicator 40.

Comments on the 2000-2005 Forest Development Plan were received from Saulteau and West Moberly First Nation, The District of Hudson's Hope, a trapper and the Chetwynd Environmental Society. Canfor responded to each of the comments. Responses to First Nations are summarized in Indicator 43. The District Manager was satisfied that Canfor's responses to public comments adequately addressed the comments received.

In 2000 comments were received from West Moberly First Nations and a trapper in regards to the PMP. West Moberly expressed concerns that they did not have time to properly review the application. The trapper expressed concerns regarding the use of herbicides. Canfor conducted site investigations with the trapper on June 19, 2000 and changed the prescribed treatment in one of three blocks visited. The remaining 2 blocks were not changed due to the high incidence of competition and seedling mortality.

REVISIONS

No revisions are suggested for this indicator or objective.

2.49 PUBLIC ENQUIRY FORMS

Indicator:	Objective:
49. Public enquiry forms	We will respond to public inquiries on our practices (in addition to normal planning processes within 1 month of receipt, and maintain and track forms as per the Environmental Management System.

STATUS AND COMMENTS

Canfor received 6 Public Enquiries in 2000, this is 3 more than received in 1999. These enquiries included 3 requests for information, 2 compliments and 1 compliant (Table 21). There are no outstanding issues from the Public Enquiries received in 2000. Generally public enquiries documented during 1999 and 2000 have been easy to resolve by providing information to the concerned parties.

Table 22. Summary of Public Enquiries Received in Relation to TFL 48 in 2000

Person/Date	Concern	Canfor Response
Public March 1/00	Why not build a bridge across Sukunka River to save costs on timber hauling?	Canfor provided a letter by March 17/00 outlining MELP concerns regarding road access.
Environmental Group April 14/00	Requested TFL 48 FDP maps	Maps provided May 1/00.
Peace Williston May 29/00	Congratulations on environmental achievements	No response required.
Public May 29/00	Enquiry regarding visual concerns of proposed harvest block near Gwillim Park.	Maps and information regarding proposed harvest scenario May 29/00.
Private Land Owner July 6/00	Concerns regarding researchers crossing private land.	Canfor committed not to cross land again without permission and informed staff and consultants.
Guide/Outfitter Oct 17/00	Favourable comments regarding harvest areas, grass seeding and road deactivation.	No response required.

REVISIONS

No revisions are suggested for this indicator or objective.

2.50 LEVEL OF PUBLIC COMMENTS

Indicator:	Objective:
50. Level of public comments	We will provide feedback to concerned individuals and the PAC on how concerns were addressed.

STATUS AND COMMENTS

Level of public comments has been summarized in Indicators 37, 43, 45, 48 and 49.

REVISIONS

This indicator overlaps substantially with Indicators 37, 43, 45, 48 and 49. Canfor suggests reporting on those indicators and deleting this indicator.

2.51 SPATIAL AND TEMPORAL MODELS

Indicator:	Objective:
51. Spatial and temporal models	<p>51-1 We will use leading edge modeling systems to develop rotation length plans.</p> <p>51-2 We will use up-to-date vegetation inventory.</p> <p>51-3 We will use the best available science to develop an understanding of ecological response.</p>

2.51-1 Modeling Systems

STATUS AND COMMENTS

A three-year research partnership between Canfor, the Canadian Forest Service and National Science and Engineering Research Council (NSERC) was approved in November 2000 and has provided funding for the University of British Columbia to develop and refine an ecosystem-based modeling framework.

Initial work has begun on block 4 of the TFL.

REVISIONS

No revisions are suggested for this indicator or objective.

2.51-2 Vegetation Inventory

STATUS AND COMMENTS

The VRI has been updated to the end of March 2000. The next update for harvesting will be prior to the Forest Development Plan. Current status and post development plan analysis will be completed in support of the FDP.

Phase II sampling did not happen in the 2000 field season. This work will be continued in 2001. A Request For Proposals for additional sampling was issued in April 2001.

REVISIONS

No revisions are suggested for this indicator or objective.

2.51-3 Best Available Science

STATUS AND COMMENTS

See 51-1 for status and comments.

REVISIONS

No revisions are suggested for this indicator or objective.

2.52 NUMBER OF RECREATIONAL TRAILS AND CAMPSITES

Indicator:	Objective:
52. Number of recreational trails and campsites	We will provide and/or maintain a minimum of one trail and three recreation sites on the TFL.

STATUS AND COMMENTS

Carbon, Gething, and Wright Lake recreation sites had inspections conducted in the fall of 2000. No concerns were noted.

REVISIONS

No revisions are suggested for this indicator or objective.

3 LITERATURE CITED

Canadian Forest Products Ltd., 2000. Draft Management Plan 3 for Tree Farm Licence 48.
Canadian Forest Products Ltd. Peace Region, Chetwynd Operation. 108 pp. +
Appendices.

Landsong Heritage Consulting, 2001. Archaeological Impact Assessment, Permit 2000-287.
Prepared for Canadian Forest Products Ltd., 54 pp.

Landsong Heritage Consulting, 2001. Archaeological Impact Assessment, Permit 2000-272.
Prepared for Canadian Forest Products Ltd., 44 pp.

Appendix 1. Glossary of Acronyms and Terms

GLOSSARY OF TERMS

AAC (Allowable Annual Cut)

The annual rate of timber harvesting specified for an area of land by the chief forester of the BC Ministry of Forests. The chief forester sets AACs for timber supply areas (TSAs) and Tree Farm Licences (TFLs) in accordance with Section 8 of the *Forest Act*.

Abiotic

Not of biological origin (see biotic). E.g., windthrow, forest fires, flooding.

Adaptive Management

A learning approach to management that incorporates the experience gained from the results of previous actions into decisions. It is a continuous process requiring constant monitoring and analysis of the results of past actions that are used to update current plans and strategies.

Anthropogenic

Influenced by the impact of man on nature.

BEC (Biogeoclimatic Ecosystem Classification)

A hierarchical classification scheme having three levels of integration; regional, local and chronological; and combining climatic, vegetation and site factors. The hierarchical classification includes Biogeoclimatic Zone ⇒ sub-zone ⇒ variant ⇒ site series.

Biogeoclimatic Zone

A geographic area having similar patterns of energy flow, vegetation, and soils as a result of a broadly homogenous macroclimate. British Columbia has 14 biogeoclimatic zones, of which the AT (Alpine Tundra), ESSF (Englemann Spruce Subalpine fir), SBS (Subboreal Spruce), BWBS (Boreal White and Black Spruce) are found in TFL 48.

Biogeoclimatic Variant

A subdivision of a biogeoclimatic subzone. Variants reflect further differences in regional climate and are generally recognised for areas slightly drier, wetter, snowier, warmer or colder than other areas in the subzone. For example, the BWBS mw1 is warmer than the BWBS wk1.

Biodiversity (or Biological Diversity)

The variability among living organisms from all sources including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

Biotic

Relating to living beings, or of biological origin (see abiotic). E.g., insect outbreak, disease

Blue-listed Species

In British Columbia, the designation of an indigenous species, sub-species, or population as being vulnerable or at risk because of low or declining numbers or presence in vulnerable habitats. Included in this classification are populations generally suspected of being vulnerable, but for which information is too limited to allow designation in another category.

Botanical Forest Products

Non-timber based products gathered from forest and range land. There are seven recognised categories: wild edible mushrooms, floral greenery, medicinal products, fruits and berries, herbs and vegetables, landscaping products, and craft products.

CDC (Conservation Data Centre)

The British Columbia Conservation Data Centre (CDC) (see Blue-listed and Red-listed Species). The staff specialists at the CDC, in co-operation with scientists and specialists throughout the province, have identified those vertebrate animals, vascular plants and plant associations in the province which have become most vulnerable. Each of these rare and endangered species and plant associations has been assigned a [global](#) and [provincial](#) rarity rank according to an objective set of criteria established by [The Nature Conservancy of the United States](#), and a status on the provincial [Red or Blue lists](#).

CITES (Convention on International Trade in Endangered Species)

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement which regulates trade in a number of species of animals and plants, their parts and derivatives, and any articles made from them. The Convention is applied in Canada in accordance with the Wild Animal and Plant Trade Regulations made under the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRITA).

Appendix I animals and plants are rare or endangered, and people are not allowed to trade them, or their parts or derivatives for commercial purposes. Animals and plants listed on Appendix II are there for one of two reasons: 1) Their trade is being controlled because, if left unregulated, there is a risk that they will become rare or endangered, or 2) the species are similar to a rare or endangered Appendix I species. Appendix III animals and plant are being carefully managed by the country which has asked to have them added to the CITES control list.

COSEWIC

The Committee on the Status of Endangered Wildlife In Canada (COSEWIC) determines the national status of wild Canadian species, sub-species and separate populations suspected of being in danger. It bases its decisions on the best up-to-date scientific information available.

DFA (Defined Forest Area)

A specific area of land, forest and water delineated for the purposes of registration of a Sustainable Forest Management system (i.e., TFL 48).

CMT (Culturally Modified Tree)

A culturally modified tree (CMT) is a tree that has been altered by native people as part of their traditional use of the forest. Non-native people also have altered trees, and it is sometimes difficult to determine if an alteration (modification) is of native or non-native origin. There are no reasons why the term "CMT" could not be applied to a tree altered by non-native people. However, the term is commonly used to refer to trees modified by native people in the course of traditional tree utilization.

ECA (Equivalent Clearcut Area)

Equivalent clearcut area (ECA) is the area that has been harvested, cleared or burned, with consideration given to the silvicultural system, regeneration growth, and location within the watershed. ECA and road density are the two primary factors considered in an evaluation of the potential effect of past and proposed forest harvesting on peak flows.¹⁰

Ecosystem

A dynamic complex of plants, animals, and micro-organisms and their non-living environment interacting as a functioning unit. The term "ecosystem" can describe small-scale units, such as a drop of water, as well as large-scale units, such as the biosphere.⁴ Ecosystems are commonly described according to the major type of vegetation, for example, forest ecosystem, old growth ecosystem, or range ecosystem.¹

EMS (Environmental Management System)

An Environmental Management System is a set of standards established by the International Organisation for Standardization (ISO 14001). This process includes commitment, public participation, preparation, planning, implementation, measuring and assessing performance, and review and improvement of a management system. The incorporation of feedback loops into the process allows for ongoing enhancement of the integrity and performance of the management system, and is designed to lead to continual improvement.

FDP (Forest Development Plan)

An operational plan guided by the principles of integrated resource management (the consideration of timber and non-timber values), which details the logistics of timber development over a period of usually five years. Methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting the resource are set out to enable site-specific operations to proceed.

FPC (Forest Practices Code)

The Code is a term commonly used to refer to the Forest Practices Code of BC Act, the regulations made by Cabinet under the act and the standards established by the chief forester. The term may sometimes be used to refer to field guides as well. It should be remembered that unlike the act, the regulations and standards, field guides are not legally enforceable.

Free Growing

Young trees that are as high or higher than competing brush vegetation with one metre of free-growing space surrounding their leaders. As defined by legislation, a free growing crop means a crop of trees, the growth of which is not impeded by competition from plants, shrubs or other trees. Silviculture regulations further define the exact parameters that a crop of trees must meet, such as species, density and size, to be considered free growing.

GIS (Geographic Information System)

Computer systems designed to allow users to collect, manage, and analyse large volumes of spatially referenced information and associated attribute data.

Greened-up

A cutblock that supports a stand of trees that has attained the green-up height specified in a higher level plan for the area, or in the absence of a higher level plan for the area, has attained a height that is 3 m or greater. Also, if under a silviculture prescription, meets the stocking requirements of that prescription, or if not under a silviculture prescription, meets the stocking specifications for that biogeoclimatic ecosystem classification specified by the regional manager.

Harvested Area

The area that was actually harvested. Differs from NAR in that it excludes every area that did not have a commercial crop of trees harvested. Also excludes areas harvested under a different cutting authority i.e. road permit areas within cutblocks. See also Net Area to be Reforested.

Incident Tracking System (ITS)

A database maintained by Canfor to track regulatory incidents.

Indicator Species

Species chosen for their ecological, social and economic attributes to monitor habitat supply over time. Based on the LRMP, provincial and federal endangered species lists, the Identified Wildlife Guide and input from the PAC Canfor has selected the following indicator species: grizzly bear, marten, fisher, wolverine, moose, elk, caribou, mountain goat, Blackthroated Green Warbler, Northern Goshawk, Trumpeter Swan and Three-toed Woodpecker.

Or, in a silvicultural prescription, species of plants used to predict site quality and characteristics.

IWMS (Identified Wildlife Management Strategy)

Those species at risk that the deputy minister of Environment, Lands and Parks or a person authorised by that deputy minister, and the chief forester, agree will be managed through a higher level plan, wildlife habitat area or general wildlife measure.

Long Run Sustained Yield (LRSY)

The maximum biological capacity of the land base with no recognition of items such as Non Recoverable Losses.

Long-term

At a minimum, twice the period in years of the average life expectancy of the predominant tree species up to a maximum of 300 years.

Long Term Harvest Level (LTHL)

The level at which harvest can occur given management assumptions and rate of harvest. In contrast to LRSY, LTHL takes into account Non Recoverable Losses.

LU (Landscape Units)

An area of land and water used for long-term planning of resource management activities. It is important for designing strategies and patterns for landscape level biodiversity and for managing other forest resources. A landscape unit may be used by the District Manager (DM) to establish objectives for any propose permitted under section 2 of the *Forest Practices Code of British Columbia Act*.

Mean Annual Increment (MAI)

the average annual increase in volume of individual trees or stands up to the specified point in time. The MAI changes with different growth phases in a tree's life, being highest in the middle years and then slowly decreasing with age. The point at which the MAI peaks is commonly used to identify the biological maturity of the stand and its readiness for harvesting.

MELP (Ministry of Environment, Lands and Parks)

Provincial government ministry.

MoF (Ministry of Forests)

Provincial government ministry responsible for the management and protection of the province's forest and range resources for the best balance of economic, social, and environmental benefits to British Columbia.

Monitor

Repeated observation, through time, of selected objects and values in the ecosystem to determine the state of the system. In particular, it entails the comparison of objects (e.g., organisms) and processes (e.g., streamflow) before and after management actions to determine the effect of those actions upon the ecosystem.¹

NAR (Net Area to be Reforested)

The area under a Silviculture Prescription that will be reforested. This excludes areas occupied by permanent roads, areas incapable of growing a stand of trees (rock, wetland etc.), and reserves. This may include areas that did not contain a commercial stand of trees, but because it is capable of growing a stand of trees, will be reforested. See also harvested area

Non Recoverable Losses (NRLs)

Losses of timber due to fire, insects or windfall that are either too small or too inaccessible to be retrieved for lumber production.

OGMA (Old Growth Management Area)

Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as an area established under a higher level plan which contains or is managed to replace structural old growth attributes.

Old growth forests on BC's coast are characterised by the following:

1. Two or more tree species of variable sizes and spacing;
2. Large live trees;
3. Patchy understory;
4. A deep, multi-layered crown canopy with gaps;
5. Standing dead trees (snags) and coarse woody debris of variable sizes.

OPR (Operational Planning Regulations, Operational Plans)

Within the context of area-specific management guidelines, operational plans detail the logistics for development. Methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting the resource are set out to enable site-specific operations to proceed. Operational plans include a forest development plan, logging plan, access management plan, range use plan, silviculture prescription, stand management prescription and 5 year silviculture plan.

PAC (Public Advisory Committee)

A public group comprised of a variety of interests which provides input to Canfor on local Values, Goals, Indicators and Objectives.

Permanent Access Structures

Permanent access structures are defined as those roads that are not planned to be returned to a forested state. Some roads may be managed to meet access strategies but are still classed as a permanent reduction in forest area.

Preferred and Acceptable Species

Preferred and acceptable tree species are those commercial tree species that are suited to the growing conditions of the site, and are identified in the Silviculture Prescription.

Red-listed Species

In British Columbia, the designation of an indigenous species, sub-species, or population as endangered or threatened because of its low abundance and consequent danger of extirpation or extinction. Endangered species are any indigenous species threatened with imminent extinction or extirpation throughout all or a significant portion of their range in BC. Threatened species are any indigenous species that are likely to become endangered in BC if factors affecting that vulnerability are not reversed.

Regeneration Delay

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

Registered Seed

Seeds which are tested to standards for germination and quality, from a healthy source and ensures the uses of local seed sources.

Reportable Spills

Reportable level spill as defined in Canfor-Chetwynd's Emergency Preparedness and Response Plan (2000). The following is adapted from that document:

Material	Reportable Levels	
	Canfor	MOE
a) Antifreeze	5 l	5 kg
b) Diesel Fuel	20 l	100 l
c) Gasoline (auto & chainsaw)	20 l	100 l
d) Greases	20 l	100 l
e) Hydraulic Oil	20 l	100 l
f) Lubricating Oils	20 l	100 l
g) Methyl Hydrate	10 l	5 kg
h) Paints & Paint Thinners	10 l	100 l
i) Solvents	10 l	100 l
j) Pesticides	Any	1 kg
k) Explosives	Any	Any

ROS (Recreation Opportunity Spectrum)

A recreation opportunity is the availability of choice for someone to participate in a preferred recreation activity within a preferred setting and enjoy the desired experience.

Rotation

The planned number of years between the formation and regeneration of a tree crop or stand and its final cutting at a specified stage of maturity.

Sawmill Lumber Recovery Factor

(Define?)

Selection Silviculture System

A silviculture system that removes mature timber either as single scattered individuals or in small groups at relatively short intervals repeated indefinitely, where the continual establishment of regeneration is encouraged and an uneven-aged stand is maintained. As defined in the Code's Operation Planning Regulation, group selection removes trees to create openings in a stand less than twice the height of mature trees in the stand.

Seral Stage

Any stage of development of an ecosystem from a disturbed, unvegetated state to a climax plant community. (FP Code)

Seral Stage Age Classes by BEC Zone	Early	Juvenile	Mature	Old
BWBS – Conifer	<40	40-100	100-140	>140
BWBS – Deciduous	<20	20-80	80-100	>100
SBS	<40	40-100	100-250	>250
ESSF	<40	40-120	120-250	>250
BWBS – Boreal White and Black Spruce Zone SBS – Sub-Boreal Spruce Zone ESSF – Engelmann Spruce – Subalpine Fir Zone				

Shelterwood Silviculture System

A silviculture system in which trees are removed in a series of cuts designed to achieve a new even-aged stand under the shelter of remaining trees.

SFMP

Sustainable Forest Management Plan

Site Degradation

Productive forest land significantly degraded or permanently lost to forest production.

Site Index

An expression of the forest site quality of a stand, at a specified age, based either on the site height, or on the top height (height of the largest diameter tree on a 0.01 ha plot, providing the tree is suitable), which is a more objective measure (FPCode). The measure of the relative productive capacity of a site for a particular tree species, based on height at a given reference or base age (50)

Site Series

Variation in site conditions encountered within a biogeoclimatic unit is accommodated within the site classification of BEC. The site series describes all land areas capable of supporting specific climax vegetation. This can usually be related to a specified range of soil moisture and nutrient regimes within a subzone or variant, but sometimes other factors, such as aspect or disturbance history, are important determinants as well. A classification of site series for most of the biogeoclimatic units of the province has been developed by the BC Ministry of Forests and is presented in regional field guides.¹²

SFM (Sustainable Forest Management)

Management to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social, and cultural opportunities for the benefit of present and future generations.

SMZ (Special Management Zone)

The Dawson Creek LRMP has Special Management Zones based on major resource values to be given a high priority in land and resource planning and development. Resource development is permitted but must consider and address all significant values identified. SMZ include: wildlife habitat and wilderness recreation, major river corridors, and culture and heritage.

Snag

Standing dead tree or part of a dead tree.

SP (Silviculture Prescription)

A site-specific management plan that is a legal prerequisite to logging on Crown Land. SPs specify planned forest activities, the methods to be used, and the proposed constraints necessary to protect the site and its resource values.

Stand Level

The level of forest management at which a relatively homogeneous land unit can be managed under a single prescription, or set of treatments, to meet well-defined objectives.

Terrain Stability Map

Terrain mapping is a method to categorise, describe and delineate characteristics and attributes of surficial materials, landforms, and geological processes within the natural landscape. Terrain stability mapping is a method to delineate areas of slope stability with respect to stable, potentially unstable, and unstable terrain within a particular landscape. Terrain stability map polygons indicate areas or zones of initiation of slope failure.¹¹ (See *Terrain Survey Intensity*).

TFL (Tree Farm Licence)

A Tree Farm Licence (TFL) is a stewardship agreement based on a sustained yield, land-based management unit. This includes the right to harvest a specified volume of timber annually and the obligation to carry out all phases of forest management on behalf of the Ministry of Forests. The licence has a term of 25 years and is replaceable every 10 years.

Timber

Timber means trees, whether standing, fallen, living, dead, limbed, bucked or peeled (Forest Act)

Timber Harvesting Land Base

The portion of the total area of a management unit considered contributing to, and being available for, long-term timber supply. The harvesting land base is defined by reducing the total land base according to specified management assumptions.

Timber Supply Analysis

An assessment of future timber supplies over long planning horizons (more than 200 years) by using timber supply models for different scenarios identified in the planning process.

Timber Supply Review (TSR)

The timber supply review program regularly updates timber supply in each of the 37 TSAs and 34 TFLs areas throughout the province. By law, the chief forester must re-determine the AAC at least once every five years to ensure AACs are current and reflect new information, new practices and new government policies.

TIPSY (Table Interpolation Projection Program For Stand Yields)

A program that interpolates data from TASS (tree and stand simulator) – a computer model that simulates the growth of individual trees and stands. This program is based on growth trends observed in fully stocked research plots growing in a relatively pest free environment. The yields will be very close to the potential of a specific site, species and management regime.

Twenty Year Plan

A TFL licensee submits an operational timber supply projection that indicates the availability of timber by setting out a hypothetical sequence of harvesting over a period of at least 20 years, consistent with proposed management objectives. The main purpose of the plan is to demonstrate whether or not the harvests projected in the base case over the next 20 years are spatially feasible, taking into account constraining factors such as Code requirements, timber harvesting land base deductions and the volume assignments per hectare on each entry.

Vegetation Resources Inventory (VRI)**Visual Quality Objective (VQO)**

An approved resource management objective that reflects a desired level of visual quality based on the physical and sociological characteristics of the area; refers to the degree of acceptable human alteration to the characteristic landscape.

Waste

The volume of timber left on the harvested area that should have been removed in accordance with the minimum utilisation standards in the cutting authority. It forms part of the allowable annual cut for cut-control purposes.

Waterbody

Any land covered by water.

Windthrow

A tree or trees uprooted by the wind.



Appendix 2. ROS Polygon Delineation Standards

ROS Class	Factors					
	Remoteness		Naturalness		Social Experience	
	Distance from road (km)	Size (ha)	Motorized Use	Evidence of Humans	Solitude/Self-reliance	Social Encounters
Primitive (P)	>8	>5000 ha	<ul style="list-style-type: none"> occasional air access, otherwise no motorized access or use in the area. 	<ul style="list-style-type: none"> very high degree of naturalness; structures are extremely rare generally no site modification little on-the-ground evidence of other people evidence of primitive trails 	<ul style="list-style-type: none"> very high opportunity to experience solitude, closeness to nature; self-reliance and challenge. 	<ul style="list-style-type: none"> very low interaction with other people; very small party sizes expected;
Semi-Primitive Non-Motorized (SPNM)	> 1	> 1000 ha	<ul style="list-style-type: none"> generally very low or no motorized access or use may include primitive roads and trails if usually closed to motorized use. 	<ul style="list-style-type: none"> very high degree of naturalness; structures are rare and isolated except where required for safety or sanitation minimal or no site modification. little on-the-ground evidence of other people. 	<ul style="list-style-type: none"> high opportunity to experience solitude, closeness to nature, self-reliance and challenge. 	<ul style="list-style-type: none"> low interaction with other people; very small party sizes expected;
Semi-Primitive Motorized (SPM)	> 1	> 1000 ha	<ul style="list-style-type: none"> a low degree of motorized access or use. 	<ul style="list-style-type: none"> high degree of naturalness in the surrounding area as viewed from access route; structures are rare and isolated minimal site modification. some on-the-ground evidence of other people evidence of motorized use 	<ul style="list-style-type: none"> high opportunity to experience solitude, closeness to nature, self-reliance and challenge. 	<ul style="list-style-type: none"> low interaction with other people; small party sizes expected;
Roaded Natural (RN)	< 1	N/A	<ul style="list-style-type: none"> moderate amount of motorized use within the area. may have high volume of traffic through the main travel corridor. 	<ul style="list-style-type: none"> moderate degree of naturalness in surrounding area structures may be present and more highly developed; moderate site modification. some on-the-ground evidence of other people, some on-site controls. typically represent main travel corridors and recreation areas that have natural-appearing surroundings 	<ul style="list-style-type: none"> moderate to high opportunity to experience solitude, closeness to nature, self-reliance and challenge. 	<ul style="list-style-type: none"> moderate interaction with other people; small to large party sizes expected;
Roaded Modified (RM)	< 1	N/A	<ul style="list-style-type: none"> moderate to high degree of motorized use for both access and recreation. 	<ul style="list-style-type: none"> low degree of naturalness; moderate number of more highly developed structures; highly modified in areas; generally dominated by resource extraction activities. on-the-ground evidence of other people and on-site controls. 	<ul style="list-style-type: none"> low to moderate opportunity to experience solitude, closeness to nature, self-reliance and challenge. 	<ul style="list-style-type: none"> moderate to high interaction with other people; moderate to large party sizes expected;
Rural (R)	< 1	N/A	<ul style="list-style-type: none"> high degree of motorized use for both access and recreation. 	<ul style="list-style-type: none"> very low degree of naturalness; complex and numerous structures, high concentrations of human development and settlements associated with agricultural land. obvious on-the-ground evidence of other people and on-site controls. 	<ul style="list-style-type: none"> low opportunity to experience solitude, closeness to nature, self-reliance and challenge. 	<ul style="list-style-type: none"> high interaction with other people; large party sizes expected;
Urban (U)	< 1	N/A	<ul style="list-style-type: none"> very high degree of motorized use for both access and recreation. 	<ul style="list-style-type: none"> very low degree of naturalness; highly developed and numerous structures associated with urban development; very high site modification. obvious on-the-ground evidence of other people and on-site controls. 	<ul style="list-style-type: none"> very low opportunity to experience solitude, closeness to nature, self-reliance and challenge. 	<ul style="list-style-type: none"> very high interactions with other people; very large party sizes expected;

Appendix 3. KPMG Forest Certification Update - February 2001

UPDATE

Forest Certification



Canadian Forest Products Chetwynd TFL 48

Canfor's Peace Region is currently registered under the ISO 14001 Environmental Management System (EMS) standard. Additionally, TFL 48 is also registered under the Canadian Standards Association's Sustainable Forest Management System (CSA-SFM) standard.

In January 2001, an audit team from KPMG Quality Registrar Inc. carried out a periodic assessment of both the ISO 14001 and CSA-SFM registrations. This Certification Update summarizes the process and KPMG's findings.

Background

- TFL 48 was registered to ISO 14001 in October, 1999 and CSA-SFM in July, 2000. The TFL is one of Canfor's three SFM registered area-based tenures.
- The implementation of an **ISO 14001** based EMS assures the public that Canfor is operating under the objectives of continually improving environmental performance and reducing environmental impact.
- The implementation of a **CSA SFM** System assures the public that Canfor is conducting sustainable forest management on a defined forest area to the standards defined by the CSA. These standards are based on the criteria and indicators of sustainable forest management developed by the Canadian Council of Forest Ministers. A public participation process is also an important requirement of the CSA System.



The audit

- *Initial Registration Audit* – The initial audit included a complete assessment of operations on Canfor's TFL 48. The assessment consisted of an exhaustive EMS document review and a full-scope field audit.
- *Periodic Assessments* – These are used to monitor the continued conformance of operations to certification standards. They include a sample of roughly one-third of the certification elements.
- The January 2001 Periodic Assessment focused primarily on field practices, including the following elements:
 - training and awareness;
 - EMS documentation;
 - operational controls and implementation (functional work instructions and operational plans);
 - emergency preparedness and response; and,
 - internal monitoring, measurement and assessment.



The audit included both ground and helicopter based field inspections of recent activities.



Findings – TFL 48

Noteworthy comments

- No nonconformances were identified during the January, 2001 Periodic Assessment.
- Integration of SFM Objectives into the operation’s environmental management programmes is ongoing.
- Positive progress continues to be made toward SFM Objectives such as habitat modeling.
- Public involvement continues to occur through the Public Advisory Committee (PAC). The PAC environmental representative observed part of the field work during the periodic assessment.
- Impressive tracking and management efficiencies are being developed through the implementation of Genus.
- Good field practices were observed and the general knowledge of the EMS by contractors was high, particularly with regards to:
 - pre-works and logging plan maps;
 - training of new operators; and,
 - camps and fueling facilities.

Key opportunities for improvement

- SFM commitments with respect to backcountry access levels should be further defined and discussed with the Public Advisory Committee.
- In isolated incidences, older, lower quality maps were being used by on-site operators.
- There are alternate versions of the Emergency Response Plan in the field manual, field operations manual and on the back of logging plan maps. This can be confusing to operators and leads to the potential dilution of important information.



Field operators showed a good awareness of Canfor’s procedures in all aspects of forest operations.

January, 2001 ISO 14001 and CSA-SFM Periodic Assessments	
Major nonconformances	0
Minor nonconformances	0
Opportunities for improvement	5

Major nonconformances:

- Are pervasive or critical to the achievement of the EMS/SFM Objectives.

Minor nonconformances:

- Are isolated incidents that are non-critical to the achievement of EMS/SFM Objectives.

All nonconformances require an action plan within 30 days and must be addressed by the operation.

Major nonconformances must be addressed immediately or registration can not be achieved/maintained.

Opportunities for Improvement:

- Are not nonconformances but are comments on specific areas of the EMS where improvements can be made.

Contacts:

Appendix 4. Canfor - Chetwynd SFM Matrix

4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.	Value - a principle, standard, or quality considered worthwhile or desirable.	Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.	Indicator - a measurable variable used to report progress toward the achievement of a goal.	Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.
1. Conservation of Biological Diversity - <i>Biological diversity is conserved by maintaining the variability of living organisms and the complexes of which they are part.</i>				
<i>(a) Ecosystem diversity is conserved if the variety and landscape-level patterns of communities and ecosystems that naturally occur on the DFA are maintained through time.</i>	1) Landscape level ecosystem diversity	1) We will conserve or restore ecosystem diversity within the natural limits of variation within DFA over time.	1.1) Forest type and seral stage distribution 1.2) Patch size distribution 1.3)-Protected Area by seral stage	1.1.1) We will sustain forest types over time. 1.1.2) We will sustain seral stage within the natural range of variation over time. 1.2) We will maintain a patch size consistent within natural disturbance types. 1.3) Identify seral stage distribution in Protected Areas within the TFL (e.g.,Bocok, Butler, Ridge, Elephant Ridge/Gwilliam, Kiln Se Za, Pine/Lemoray, Peace River/Boudreau).
<i>(b) Species diversity is conserved if all native species found on the DFA prosper through time.</i>	1) Native species diversity	1) We will sustain suitable habitat levels to sustain species diversity	1.1) Number of forest dependant plant species, plant associations, fish and wildlife classified as threatened, endangered, or vulnerable in the TFL.	1.1) We will ensure no species is uplisted as a result of Canfor management activities within the TFL.

<p>4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.</p>	<p>Value - a principle, standard, or quality considered worthwhile or desirable.</p>	<p>Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.</p>	<p>Indicator - a measurable variable used to report progress toward the achievement of a goal.</p>	<p>Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.</p>
			<p>1.2) Habitat supply for indicator species. (grizzly bear, wolverine, marten, fisher, elk, moose, mtn. goat, caribou, Northern Goshawk, Trumpeter Swan, Black-throated Green Warbler, and Three-toed Woodpecker)</p> <p>1.3) Disease transmission from domestic sheep grazing activities.</p>	<p>1.2.1) We will ensure distribution of habitat for indicator species across the TFL.</p> <p>1.2.2) We will ensure sufficient furbearer habitat on a drainage-by-drainage basis exists to enable the maintenance of populations.</p> <p>1.3) No disease transmission from domestic sheep to wild sheep populations from domestic sheep use in Canfor activities.</p>
<p><i>(c) Genetic diversity is conserved if the variation of genes within species is maintained.</i></p>	<p>1) Genetic diversity</p>	<p>1) We will conserve genetic diversity of native plant species.</p> <p>2) We will conserve genetic diversity of wildlife</p>	<p>1.1) Forest type and seral stage distribution</p> <p>1.2) Collection and use of registered seed for coniferous planted species.</p> <p>2.1) Patch size distribution to address habitat fragmentation</p>	<p>1.1.1) We will sustain forest types over time.</p> <p>1.1.2) We will sustain seral stage within the natural range of variation over time.</p> <p>1.2) All seeds registered.</p> <p>2.1) We will maintain a patch size consistent with natural disturbance types.</p>

4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.	Value - a principle, standard, or quality considered worthwhile or desirable.	Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.	Indicator - a measurable variable used to report progress toward the achievement of a goal.	Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.
2. Maintenance and Enhancement of Forest Ecosystem Condition and Productivity - Forest ecosystem condition and productivity are conserved if the health, vitality, and rates of biological production are maintained.				
<i>(a) Forest health is conserved if biotic (Including anthropogenic) and abiotic disturbances and stresses maintain both ecosystem processes and ecosystem conditions within a range of natural variability.</i>	1) Forest Health	1) We will conserve forest health	1) Area and severity of incidence of fire, windfall, insects and disease.	1.1) We will minimize Non Recoverable Losses to less than 10% of AAC based on a 10 year rolling average. 1.2) We will salvage 90% of merchantable timber volumes within the THLB damaged by fire, windfall, insects and disease within 18 months of occurrence.
<i>(b) Ecosystem resilience is conserved if ecosystem processes and the range of ecosystem conditions allow ecosystems to persist, absorb change, and recover from disturbances.</i>	1) Ecosystem resilience	1) We will sustain ecosystem capability to recover from disturbance. 2) We will sustain ecosystem components.	1.1) Percent of a harvested area that is reforested. 1.2) Forest type and seral stage distribution. 2.1) Minimum harvest age (as a surrogate for nutrient cycling).	1.1) We will reforest 100% of net area to be reforested within 2 years of harvest, on average. 1.2.1) We will sustain forest types over time. 1.2.2) We will sustain seral stages within the natural range of variation over time. 2.1) Minimum harvest ages in years will be: Aspen 61, Cottonwood 61, Pine 81, Subalpine Fir 81, Spruce 121 (based on leading species and average stand age).

<p>4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.</p>	<p>Value - a principle, standard, or quality considered worthwhile or desirable.</p>	<p>Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.</p>	<p>Indicator - a measurable variable used to report progress toward the achievement of a goal.</p>	<p>Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.</p>
			<p>2.2) Wildlife Tree Patches</p> <p>2.3) Protected areas by seral stage</p> <p>2.4) Old Growth Management Areas</p> <p>2.5) Coarse Woody Debris</p> <p>2.6) Habitat Connectivity</p>	<p>2.2) Wildlife Tree Patches will not be less than 8% of the harvested area, on average.</p> <p>2.3) Identify seral stage distribution in Protected Areas within the TFL (e.g.,Bocok, Butler, Ridge, Elephant Ridge/Gwilliam, Kiln Se Za, Pine/Lemoray, Peace River Boudreau).</p> <p>2.4) We will sustain old growth habitat values within the TFL.</p> <p>2.5) We will maintain natural levels of coarse woody debris (CWD) across the TFL.</p> <p>2.6) Maintain an adequate level of habitat connectivity at landscape and stand levels with an emphasis on species dependant on mature forest or forest types (e.g., caribou and marten) recognizing that habitat connectivity may shift across the landscape.</p>
<p><i>(c) Ecosystem productivity is conserved if ecosystem conditions are capable of supporting all naturally occurring species.</i></p>	<p>1) Ecosystem productivity</p>	<p>1) We will sustain or enhance ecosystem productivity over time.</p>	<p>1.1) Area of the TFL occupied by permanent access structures associated with forest management activities.</p>	<p>1.1 We will limit impacts on the landbase due to the presence of permanent roads to less than 3.5% of the gross landbase of the TFL. (See Meeting minutes re: discussion)</p>

4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.	Value - a principle, standard, or quality considered worthwhile or desirable.	Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.	Indicator - a measurable variable used to report progress toward the achievement of a goal.	Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.
		2) We will sustain habitat for all naturally occurring species at natural ranges.	1.2) Percent of a harvested area that is reforested. 2) Habitat supply for indicator species (see Glossary).	1.2) We will reforest 100% of net area to be reforested within 2 years of harvest, on average. 2) We will ensure distribution of habitat for indicator species across the TFL.
3. Conservation of Soil and Water Resources- <i>Soil and water resources and physical environments are conserved if *the quantity and quality of soil and water within forest ecosystems are maintained.</i>				
<i>(a) Physical environments are conserved if the permanent loss of forest area to other uses or factors is minimized, and if rare physical environments are protected.</i>	1) Forest land base	1) We will conserve productive area of forest land base.	1) Area of the TFL occupied by permanent access structures associated with forest management activities.	1) We will limit impacts on the landbase due to the presence of permanent roads to less than 3.5% of the gross landbase of the TFL.
<i>(b) Soil resources are conserved if the ability of soils to sustain forest productivity is maintained within characteristic ranges of variation.</i>	1) Soil productivity	1) We will conserve productive capacity of soil.	1.1) Area of the TFL occupied by permanent access structures associated with forest management activities.	1.1)-We will limit impacts on the landbase due to the presence of permanent roads to less than 3.5% of the gross landbase of the TFL.

<p>4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.</p>	<p>Value - a principle, standard, or quality considered worthwhile or desirable.</p>	<p>Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.</p>	<p>Indicator - a measurable variable used to report progress toward the achievement of a goal.</p>	<p>Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.</p>
	<p>2) Soil Quantity</p>	<p>2) We will minimize soil erosion</p>	<p>1.2) Number of reportable spills entered into Incident Tracking System. 1.3) Use of environmentally friendly lubricants 1.4) Soil productivity measures 1.5) Soil degradation 2.1) Seedling growth or establishment 2.2) Soil disturbance surveys</p>	<p>1.2) We will minimize the number of reportable spills. 1.3) We will research and identify environmentally friendly lubricants by March 1, 2001. 1.4) We will use site index measures based on BEC zone (SIBEC) to confirm the predicted long-term soil productivity. 1.5) We will not exceed site degradation guidelines. 2.1) We will meet Free growing requirements within Silvicultural Prescriptions. 2.2) We will not exceed soil disturbance limits within cutblocks.</p>

<p>4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.</p>	<p>Value - a principle, standard, or quality considered worthwhile or desirable.</p>	<p>Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.</p>	<p>Indicator - a measurable variable used to report progress toward the achievement of a goal.</p>	<p>Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.</p>
<p>(c) <i>Water resources are conserved if water quality and quantity is maintained.</i></p>	<p>1) Water quality and quantity</p>	<p>1) We will conserve water quality and quantity within the natural range of variation. Further discussion needed.</p>	<p>1.1) Area in cutblock managed as Riparian Reserve Zone or Riparian Management Zone by appropriate stream, lake or wetland classification.</p> <p>1.2) Number of reportable spills entered into Incident Tracking System.</p> <p>1.3) Area of stream affected by timber harvesting and road construction</p> <p>1.4) Sediment levels</p>	<p>1.1) We will meet or exceed appropriate riparian measures as recommended by the Forest Practices Code Riparian Guidebook.</p> <p>1.2) We will minimize the number of reportable spills.</p> <p>1.3.1) We will identify hazard indices through watershed assessment procedures as necessary.</p> <p>1.3.2) We will rehabilitate water courses and hazards to water courses as they arise.</p> <p>1.3.3) We will meet or exceed appropriate riparian measures as recommended by the Forest Practices Code Riparian Guidebook.</p> <p>1.4.2) We will ensure that sedimentation due to harvesting and road building activities falls within acceptable limits Further discussion needed.</p>

<p>4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.</p>	<p>Value - a principle, standard, or quality considered worthwhile or desirable.</p>	<p>Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.</p>	<p>Indicator - a measurable variable used to report progress toward the achievement of a goal.</p>	<p>Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.</p>
			<p>1.5) Stream flow levels</p>	<p>1.5) We will design forest management activities to minimize impact on stream flow (see Action Plan NC-SFMIA-03 (Minor)).</p>
<p>4. Forest Ecosystem Contributions to Global Ecological Cycles – Forest conditions and management activities contribute to the health of global ecological cycles. This contribution is maintained if</p>				
<p>(a) the processes that are responsible for recycling water, carbon, nitrogen, and other life-sustaining elements are maintained;</p>	<p>1) Ecological cycles</p>	<p>1) We will maintain or restore ecological cycles within levels of historic variation.</p>	<p>1.1) Seral stage distribution 1.2) Forest health 1.3) Percent of a harvested area that is reforested.</p>	<p>1.1) We will sustain forest types over time. 1.2) We will sustain seral stage within the natural range of variation overtime. 1.2) We will minimize Non-Recoverable Losses less than 10% of AAC, based on a 10 year rolling average. 1.3) We will reforest 100% of net area to be reforested within 2 years of harvest, on average.</p>

4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.	Value - a principle, standard, or quality considered worthwhile or desirable.	Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.	Indicator - a measurable variable used to report progress toward the achievement of a goal.	Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.
<i>(b) utilization and rejuvenation are balanced and sustained; and</i>	1.1) Sustainable yield of timber	1) We will balance annual growth rate and harvest rate.	1.1) Allowable Annual Cut 1.2) Sawmill Lumber Recovery Factor (SLRF), Chip Recovery Factor and shipment of mini chips. 1.3) Harvest levels/volumes 1.4) Waste 1.5) Timber harvesting utilization standards	1.1) We will ensure that the Allowable Annual Cut will not adversely impact Long Term Harvest Level. 1.2) We will target annual range of 247-252 fbm/m ³ , 0.15 BDU/ m ³ and 60,000 tonnes/year, respectively. 1.3) We will achieve periodic cut control within 10% of target, over 5 years. 1.4) We will assess all waste volumes for harvested blocks and report annually (See Action Plan Minor 1480.3 NC- SFMIA-01). 1.5) We will meet or exceed timber utilization standards of 1999 (i.e., 4 inch tops).
<i>(c) forest lands are protected from sustained deforestation or conversion to other uses.</i>	1) Forested land base	1) We will sustain forests within the TFL.	1.1) Area of forested land.	1.1.1) We will track and monitor losses to other uses and incorporate these losses into AAC calculations every five years.

<p>4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.</p>	<p>Value - a principle, standard, or quality considered worthwhile or desirable.</p>	<p>Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.</p>	<p>Indicator - a measurable variable used to report progress toward the achievement of a goal.</p>	<p>Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.</p>
			<p>1.2) Area of the TFL occupied by permanent access structures associated with forest management activities.</p> <p>1.3) Percent of a harvested area that is reforested.</p>	<p>1.1.2) We will notify Ministry of Energy and Mines and Oil and Gas Commission of objective for oil and gas and mining tenure holders to reforest, within operable forest areas, to MoF standards inactive mines, well sites, pipelines and reclaimed roads within 2 years of becoming inactive.</p> <p>1.2) We will limit impacts on the landbase due to the presence of permanent roads to less than 3.5% of gross landbase of the TFL.</p> <p>1.3) We will reforest 100% of net area to be reforested within 2 years of harvest, on average.</p>
<p>5. Multiple Benefits to Society - <i>Forests provide a sustained flow of benefits for current and future generations if multiple goods and services are provided over the long term. Multiple benefits are maintained if</i></p>				

<p>4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.</p>	<p>Value - a principle, standard, or quality considered worthwhile or desirable.</p>	<p>Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.</p>	<p>Indicator - a measurable variable used to report progress toward the achievement of a goal.</p>	<p>Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.</p>
<p><i>(a) extraction rates are within the long-term productive capacity of the resource base;</i></p>	<p>1) Sustainable harvest levels</p>	<p>1) We will establish harvest at a level that can be maintained in perpetuity for coniferous and deciduous species.</p>	<p>1.1) Annual Allowable Cut 1.2) Harvest Levels/Volumes</p>	<p>1.1) We will ensure that the Allowable Annual Cut will not adversely impact Long Term Harvest Level. 1.2) We will achieve periodic cut control within 10% of target, over 5 years.</p>
<p><i>(b) resource businesses exist within a fair and competitive investment and operating climate; and</i></p>	<p>1) Economic viability for Canfor 2) Local employment</p>	<p>1) We will maintain a local, up to date timber processing facility and infrastructure. 2) We will ensure local communities and contractors have the opportunity to share in benefits such as jobs, contracts and sales.</p>	<p>1) Average investment in new technology, capital maintenance and construction at Canfor operations in Chetwynd. 2) The economic contribution that Canfor Chetwynd makes to local communities and contractors.</p>	<p>1) We will invest \$2.5 million annually, based on 10 year rolling average, in new technology, capital maintenance and construction. 2.1) We will annually report on the economic indices that reflect Canfor's contribution to local communities and contractors. (<i>property taxes, salary and wages, contract services {split out local vs. non-local}, supplies, community donations, and jobs/m³</i>) 2.2) We will provide contracting opportunities that support local employment where the skills exist.</p>

<p>4.4 CCFM Criteria and Critical Elements The Canadian Council of Forest Ministers has developed criteria and indicators to define sustainable forest management in a national context. The six CCFM criteria reflect broad Canadian values to guide sustainable forest management. Each criterion contains a number of critical elements that further refine the scope of the criteria. All of the following critical elements of the CCFM criteria shall be addressed at the DFA level in order for an SFM System to be registered.</p>	<p>Value - a principle, standard, or quality considered worthwhile or desirable.</p>	<p>Goal - a broad, general statement that describes a desired state or condition related to one or more forest values.</p>	<p>Indicator - a measurable variable used to report progress toward the achievement of a goal.</p>	<p>Objective - a clear, specific statement of expected quantifiable results to be achieved within a defined period of time related to one or more goals. An objective is commonly stated as a desired level of an indicator.</p>
<p>(c) forests provide a mix of market and non-market goods and services.</p>	<p>1) Economic diversity</p>	<p>1.1) We will maintain domestic grazing levels over time.</p> <p>1.2) We will sustain acceptable levels of habitat for key furbearer and big game species.</p> <p>1.3) We will sustain acceptable levels of visual quality in key public access, recreation, and tourism corridors.</p> <p>1.4) We will sustain backcountry condition in key backcountry areas.</p>	<p>1.1) Animal unit months</p> <p>1.2) Habitat supply for indicator species (martens, fisher, moose, elk).</p> <p>1.3.1) Visual landscape inventory.</p> <p>1.3.2) Level of public acceptance of Visual Landscape Inventory</p> <p>1.4) Back country Condition</p>	<p>1.1) We will maintain an annual average of 1000 Animal Unit Months (excludes brush control by sheep grazing)</p> <p>1.2) We will ensure distribution of habitat for indicator species across the TFL.</p> <p>1.3.1) We will maintain and update an approved visual landscape inventory.</p> <p>1.3.2) We will include public input in reviewing and updating the visual landscape inventory.</p> <p>1.3.3) We will propose and manage harvesting cutblocks consistent with Visual Sensitivity Classes.</p> <p>1.4) We will maintain or increase backcountry condition in Klin Se Za, Bocock, Butler Ridge, Pine/Lemoray, Peace River/Boudreau and Elephant Ridge/Gwilliam Protected Areas and manage special management zones (Klin se za, North Burnt, Dunlevy) as per LRMP.</p>

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		<p>1.5) We will sustain acceptable levels of habitat to provide botanical forest products.</p> <p>1.6) We will provide recreation opportunities on the TFL.</p>	<p>1.5) Habitat supply for botanical forest products.</p> <p>1.6) Number of recreation trails and campsites.</p>	<p>1.5) We will investigate local uses of botanical forest products to determine habitat requirements.</p> <p>1.6) We will provide and/or maintain a minimum of one trail and three recreation sites on the TFL.</p>
<p>6. Accepting Society's Responsibility for Sustainable Development - Society's responsibility for sustainable forest management requires that fair, equitable, and effective forest management decisions are made. Sustainable forest management requires that</p>				
<p>(a) forests are managed in ways that reflect social values, and management is responsive to changes in those values;</p>	<p>1) Social responsibility</p>	<p>1) We will seek active partnerships that build community relationships and strengthen Canfor's business</p>	<p>1) Public Advisory Committee</p>	<p>1) We will establish and maintain Public Advisory Committee and hold at least two meetings annually.</p>

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		<p>2) We will develop a process to provide ongoing involvement to reflect changes in social values.</p> <p>3) We will reflect the LRMP and other land use planning decisions in operations.</p>	<p>2) Public Advisory Committee</p> <p>3.1) Participation in LRMP.</p> <p>3.2) LRMP and land use plans</p>	<p>2) We will establish and maintain Public Advisory Committee and hold at least two meetings annually.</p> <p>3.1) We will attend meetings and provide information as required, for LRMP functions.</p> <p>3.2) We will manage operations to the spirit and intent of the Dawson Creek LRMP through Management Plan and Forest Development Plans</p>
<p><i>(b) duly established Aboriginal and treaty rights are respected;</i></p>	<p>1) Treaty and Aboriginal rights</p>	<p>1) We will respect Treaty 8 rights</p>	<p>1.1) Pro-active consultation process for significant activities such as proposed timber harvesting.</p> <p>1.2) Archaeological impact assessments on proposed harvest blocks.</p>	<p>1.1) Forest Development Plan to be referred to Sauleau and West Moberly FNs.</p> <p>1.2) We will conduct archaeological impact assessments as indicated through archaeological overviews or inventory.</p>

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<p><i>(c) the special and unique needs of Aboriginal peoples are respected and accommodated in forest management decisions;</i></p>	<p>1) Aboriginal needs</p>	<p>1) We will increase our understanding of Aboriginal issues and needs and work with Bands to find solutions or give assistance where possible.</p>	<p>1.1) Aboriginal Liaison</p> <p>1.2) Incorporate objectives of Klin Se Za into Forest Development Plan and Management Plan.</p> <p>1.3) Aboriginal employment</p>	<p>1.1) We will increase the level of aboriginal input to forest management by meeting with Band councils, representatives, contractors, and/or individuals as issues and opportunities arise.</p> <p>1.2) We will maintain Klin Se Za Protected Area and Special Management Zone as per LRMP.</p> <p>1.3) We will budget \$100,000 annually for aboriginal contractors.</p>
<p><i>(d) the decision-making process is developed with input from directly affected and local interested parties;</i></p>	<p>4) Public acceptance of decision making process</p>	<p>1) We will involve all parties (public, agencies, other licence holders, etc.) in development of decision-making process</p>	<p>1.1) Public Advisory Committee</p> <p>1.2) Forest Development Plan, Pest Management Plan, TFL Management Plans</p> <p>1.3) Public Enquiry Forms</p>	<p>1.1.1) We will establish and maintain Public Advisory Committee and hold at least two meetings annually.</p> <p>1.1.2) We will hold an annual openhouse to review SFM plan performance.</p> <p>1.2) We will advertise and refer plans to all parties in a proactive manner (public, agencies and other licence holders).</p> <p>1.3) We will respond to public inquiries on our practices (in addition to normal planning processes) within 1 month of receipt and maintain and track forms as per Environmental Management System.</p>

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<p><i>(e) decisions are made as a result of informed, inclusive, and fair consultation with people who have an interest in forest management or are affected by forest management decisions; and</i></p>	<p>1) Informed Decision Making</p>	<p>1) We will involve all parties (public, agencies, other licence holders, etc.) in decision making process.</p>	<p>1) Public Advisory Committee 2) Level of Public Comments (e.g., FDP Public Comments)</p>	<p>1.1) We will establish and maintain Public Advisory Committee and hold at least two meetings annually. 1.2) We will hold an annual openhouse to review SFM plan performance. 2.1) We will provide feedback to concerned individuals commenting on planning processes (e.g., FDP, PMP) within one month and the PAC by the next scheduled meeting on how concerns were addressed. 2.2) We will respond to public inquiries on our practices (in addition to normal planning processes) within one month of receipt and maintain and track forms as per EMS.</p>
<p><i>(f) collective understanding of forest ecosystems, values, and management is increased and used in the decision-making process.</i></p>	<p>1) Continual Improvement</p>	<p>1) We will improve and apply knowledge of forest ecosystems, values and management.</p>	<p>1) Spatial and temporal models</p>	<p>1.1) We will use leading edge modelling systems to develop rotation length plans within 3 years. 1.1) We will use up-to-date vegetation inventory. 1.2) We will use the best available science to develop an understanding of ecological response.</p>