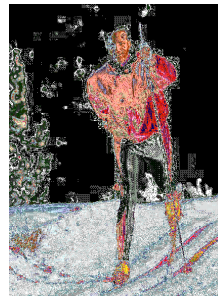


Mackenzie

Sustainable Forest Management Plan



Mackenzie SFMP



2011/12 Annual Report



TABLE OF CONTENTS

1.0 Introduction	1
1.1 List of Acronyms	1
1.2 Executive Summary	2
1.3 SFM Performance Reporting	3
2.0 SFM Indicators, Targets and Variances	4
Indicator 1 Old forest	4
Indicator 2 Interior Forest	4
Indicator 3 Biodiversity Reserve Effectiveness	5
Indicator 4 Productive Forest Representation	5
Indicator 5 Patch Size	6
Indicator 6 Coarse Woody Debris	7
Indicator 7 Wildlife Trees	7
Indicator 8 Riparian Management Area Effectiveness	8
Indicator 9 Sedimentation	8
Indicator 10 Stream Crossings	8
Indicator 11 Peak Flow Index	9
Indicator 12 Road Re-vegetation	9
Indicator 13 Road Environmental Risk Assessment	10
Indicator 14 Species within the DFA	10
Indicator 15 Sites of Biological Significance	11
Indicator 16 Soil Conservation	12
Indicator 17 Terrain Management	12
Indicator 18 Reportable Spills	13
Indicator 19 Site conversion	13
Indicator 20 Permanent Access Structures	13
Indicator 21 Communication of planned Deactivation Projects	14
Indicator 22 Regeneration Delay	14
Indicator 23 Free Growing	15
Indicator 24 Prioritizing harvest of damaged stands	15
Indicator 25 Harvest volumes	16
Indicator 26 First-Order Wood Products	17
Indicator 27 Local Investment	17
Indicator 28 Contract Opportunities to First Nations	18
Indicator 29 Satisfaction (PAG)	18
Indicator 30 Input into Forest Planning	19
Indicator 31 Public and Stakeholder Concerns	20
Indicator 32 Access to SFM information	21
Indicator 33 SFM Educational Opportunities	21
Indicator 34 Heritage Conservation	21
Indicator 35 First Nations Input into Forest Planning	22
Indicator 36 First Nations Concerns	23
Indicator 37 Non-timber Benefits	23
Indicator 38 Safety Policy	24
Indicator 39 Accidents	24
Indicator 40 Signage	25
Indicator 41 Forest Area by species composition	25
Indicator 42 Proportion of genetically modified trees in reforestation efforts	25
Indicator 43 Dispersed retention levels	26
Indicator 44 Investment in training and skills development	26
Indicator 45 Level of direct and indirect employment	27
Indicator 46 People reached through educational outreach	27
Indicator 47 Protection of identified sacred and culturally important sites	28
Indicator 48 Understanding of the nature of Aboriginal Rights and Title	28
Appendix 1	30

1.0 Introduction

This is the fifth Annual Report of the Mackenzie Sustainable Forest Management Plan. It covers the reporting period of April 1, 2011 to March 31, 2012. The Sustainable Forest Management Plan (SFMP) is a result of the combined efforts of Canfor and British Columbia Timber Sales (BCTS) to achieve and maintain Canadian Standards Association (CSA) certification to the CSA Z809-08 standard. The signatories to the plan are:

1. BC Timber Sales, Prince George Business Area (TPG) – Mackenzie Operations
2. Canadian Forest Products Ltd., Mackenzie Operations

The CSA Standard provides SFM specifications that include public participation, performance, and system requirements that must be met to achieve certification. These specifications were the framework for the development of the Mackenzie SFMP. Canfor and BCTS have existing management systems that contribute to the overall SFM strategy. These may include existing management systems such as ISO 14001 Environmental Management Systems, standard operating procedures, and internal policies.

One of the public participation strategies suggested in the CSA SFM Standard is the formation of a local group of interested and affected members of the public to provide input on an ongoing basis. This strategy provides the base for the formation of a Public Advisory Group (PAG) whose purpose is to achieve CSA standard's public participation requirements. Canfor and BCTS established a PAG to assist with the development of the SFMP. A wide range of public sector interest groups from within the Mackenzie Forest District were invited to participate in the SFM process through the PAG. After completing the Terms of Reference in January 2006, the PAG established the SFMP Criteria and Elements Performance Matrix with the SFMP being completed in June of 2006. It is important to note, the Mackenzie SFMP is a working document and is subject to continual improvement. Over time, the document will incorporate new knowledge, experience and research in order to recognize society's environmental, economic and social values. For example, PAG involvement during 2010-11 was critical in updating the SFMP from the CSA Z809-02 to the CSA Z809-08 standard.

This Annual Report summarizes the signatory's performance in meeting the indicator targets outlined in the SFMP over the Mackenzie Defined Forest Area (DFA). The DFA is the Crown Forest land base within the Mackenzie Forest District and the traditional operating areas of Canfor and BCTS, excluding woodlots, Parks, Protected Areas and private land. The intent of this Annual Report is to have sustainable forest management viewed by the public as an open, evolving process that is taking steps to meet the challenge of managing the forests of the Mackenzie DFA for the benefit of present and future generations.

The following Table summarizes the results for the current reporting period. For clarification of the intent of the indicators, objectives or the management practices involved, the reader should refer to the Mackenzie Sustainable Forest Management Plan Document.

1.1 List of Acronyms

Below is a list of common acronyms used throughout this annual report. For those wishing a more comprehensive list should consult the Mackenzie Sustainable Forest Management Plan.

AAC – Annual Allowable Cut
BCTS – BC Timber Sales
BEC – Biogeoclimatic Ecosystem Classification
BEO – Biodiversity Emphasis Option
BWBS – Black and White Boreal Spruce
CSA – Canadian Standards Association
CWD – Coarse Woody Debris
DFA – Defined Forest Area
ESSF – Engelman Spruce Sub-alpine Fir
FRPA – Forest and Range Practices Act
FSR – Forest Service Road
GIS – Geographic Information System
LOWG – Landscape Objective Working Group
LRMP – Land and Resource Management Plan
LU – Landscape Unit

MoFR – Ministry of Forest and Range
 NCI – North Central Interior
 NDT – Natural Disturbance Type
 NDU – Natural Disturbance Unit
 Non-Harvestable Land Base
 OGMA – Old Growth Management Area
 PAG – Public Advisory Group
 PFI – Peak Flow Index
 RMZ – Resource Management Zone (landscape-level planning)
 RMZ – Riparian Management Zone (riparian management)
 RRZ – Riparian Reserve Zone
 SAR – Species at Risk
 SBS – Sub-Boreal Spruce
 SFM – Sustainable Forest Management
 SFMP – Sustainable Forest Management Plan
 SWB – Spruce Willow Birch
 THLB – Timber Harvesting Land Base
 TOR – Terms of Reference
 TSA – Timber Supply Area
 VIA – Visual Impact Assessment
 VQO – Visual Quality Objective

1.2 Executive Summary

Of the **48** indicators listed in Table 1, **41** indicators were met within the prescribed variances, and **7** indicators were not met within the prescribed variances. A corrective and preventative action plan is contained in the indicator discussions for each non-conformance indicator.

Table 1: Summary of indicators Status, April 1, 2010 to March 31, 2011.

Indicator Number	Indicator Description	Target Met	Pending	Target Not Met
1	Old forest			√
2	Interior forest			√
3	Biodiversity reserve effectiveness	√		
4	Productive forest representation	√		
5	Patch size	√		
6	Coarse Woody Debris	√		
7	Wildlife Trees	√		
8	Riparian Management area effectiveness			√
9	Sedimentation	√		
10	Stream Crossings	√		
11	Peak Flow Index	√		
12	Road re-vegetation	√		
13	Road environmental risk assessments	√		
14	Species within the DFA	√		
15	Sites of Biological Significance	√		
16	Soil conservation	√		
17	Terrain Management	√		
18	Reportable Spills	√		
19	Site Conversion	√		
20	Permanent Access Structures	√		
21	Communication of planned Deactivation Projects	√		
22	Regeneration Delay	√		
23	Free Growing	√		
24	Prioritizing harvest of damaged stands	√		
25	Harvest Volumes			√
26	First-order Wood Products	√		
27	Local Investment	√		
28	Contract Opportunities for First Nations	√		
29	Satisfaction (PAG)	√		

Indicator Number	Indicator Description	Target Met	Pending	Target Not Met
30	Input into Forest Planning	√		
31	Public and Stakeholder Concerns	√		
32	Access to SFM Information	√		
33	SFM Educational Opportunities	√		
34	Heritage Conservation	√		
35	First Nations Input into Forest Planning	√		
36	First Nations Concerns	√		
37	Non Timber Benefits	√		
38	Safety Policies	√		
39	Accidents	√		
40	Signage	√		
41	Forest Area by Species Composition	√		
42	Proportion of Genetically Modified Trees in Reforestation Efforts	√		
43	Dispersed Retention Levels			√
44	Investment in Training and Skills Development	√		
45	Level of Direct and Indirect Employment			√
46	People Reached through Educational Outreach	√		
47	Protection of Identified Sacred and Culturally Important Sites	√		
48	Understanding the Nature of Aboriginal Rights and Title			√
	Totals	41		7

1.3 SFM Performance Reporting

This annual report will describe the success of Canfor and BCTS in meeting the indicator targets over the DFA. The report will be available to the public and will allow for full disclosure of forest management activities, successes, and failures. Canfor and BCTS have reported individual performance within their traditional operating areas as well as the performance which contributes to shared indicators and targets across the plan area. Both Canfor and BCTS are committed to work together to fulfill the Mackenzie SFMP commitments including data collection and monitoring, participation in public processes, producing public reports, and continuous improvement.

2.0 SFM Indicators, Targets and Variances

Indicator 1 Old forest

Indicator Statement	Target and Variance
Percent of blocks and roads harvested that meet the prescribed old growth targets.	Target: 100% Variance: 0%

This indicator was chosen to monitor the amount of old forest within each Landscape Unit (LU) group. It is assumed that maintenance of all seral stages across the landscape will contribute to sustainability because doing so is more likely to provide habitat for multiple species as opposed to creating landscapes of uniform seral stage. Emphasis is placed on old forest because many species use older forests and the structural elements found therein (e.g. large snags, coarse woody debris, and multilayer canopies). These structural elements are difficult to recreate in younger forests. The targets for old forest are taken from the approved Mackenzie TSA Biodiversity Order.

Old Forest

Signatory	Number of Blocks and roads harvested			Number of blocks and roads harvested that meet the old growth targets	%in DFA
	Blocks	Roads	Total		
Canfor	40	100	140	140	100%
BCTS	36	17	53	49	92.5%
TOTAL	37	73	193	189	95.7%

Source: May 2012 Analysis Results – See Appendix 1 for analysis tables.

Indicator Discussion: BCTS: 2/36 blocks were within LU/BEC's where the targets for old were not met and are classified as old or having the potential for becoming old. 17 access roads developed and 2 did not meet the old/old interior minimums. Canfor harvested 40 blocks and associated roads which met the targets for old growth. More precise data was provided by adjacent licensees (Conifex, MK Fibre, Three Feathers Consortium) through the newly formed Landscape Objectives Working Group (LOWG). The analysis is more robust than in previous years and the LOWG will work towards jointly managing Landscape Biodiversity.

Indicator 2 Interior Forest

Indicator Statement	Target and Variance
Percent of blocks and roads harvested that meet the prescribed interior old targets.	Target: 100% Variance: 0%

Interior forest conditions refer to a situation where climatic and biotic characteristics are not significantly affected by adjacent and different environmental conditions (e.g., other seral stages, other forest or non-forest types, etc.). This indicator is important because provision of habitat for old-forest dependent species (see Indicator #1) can only occur if old forests are not significantly affected by adjacent environmental conditions. Historically, natural disturbance events such as fire, insects, and wind led to diverse landscapes characterized by forests having these interior old forest conditions. Thoughtful planning of harvesting patterns can minimize "fragmentation" of the forested landscape and help create interior old forest conditions. Furthermore, the intent of this indicator is to have interior old forest conditions represented within all ecosystem types to further enhance ecosystem resilience. The targets for interior old are taken from the approved Mackenzie TSA Biodiversity Order.

Interior Old

Signatory	Number of Blocks and roads harvested			Number of blocks and roads harvested that meet the interior old targets	%in DFA
	Blocks	Roads	Total		
Canfor	40	0	40	40	100%
BCTS	36	17	53	49	92.5%
TOTAL	37	73	93	89	95.7%

Source: May 2012 Analysis Results – See Appendix 1 for analysis tables.

Indicator Discussion: BCTS: 2/36 blocks were within LU/BEC's where the targets for old interior were not met and are classified as old or having the potential for becoming old. 17 access roads developed and 2 did not meet the old/old interior minimums. Canfor harvested 40 blocks and associated roads which met the targets for old interior. More precise data was provided by adjacent licensees (Conifex, MK Fibre, Three Feathers

Consortium) through the newly formed Landscape Objectives Working Group (LOWG). The analysis is more robust than in previous years and the LOWG will work towards jointly managing Landscape Biodiversity

Indicator 3 Biodiversity Reserve Effectiveness

Indicator Statement	Target and Variance
Percentage of blocks and roads harvested that are not within legally established protected areas, ecological reserves, or OGMA's.	<u>Target:</u> 100% <u>Variance:</u> 0%

Landscape level biodiversity reserves/ Protected Areas are areas protected by legislation, regulation, or land-use policy to control the level of human occupancy or activities (Canadian Standards Association, 2003). These include legally established Old Growth Management Areas (OGMAs), parks, ecological reserves, and new protected areas. As forestry activities may occur near these areas the chance exists for unauthorized harvesting or road construction to happen within these sites. In addition to being an obvious violation of legislation, such an act would also damage sites and organisms that were set aside for protection.

Biodiversity Reserves

Signatory	Number of Blocks and roads harvested			Blocks and roads harvested that are not within protected areas, ecological reserves, or OGMA's	%in DFA
	Blocks	Roads	Total		
Canfor	40	100	140	140	100%
BCTS	36	17	53	53	100%
TOTAL	117	76	193	193	100%

Source: GIS query.

Indicator Discussion:

Indicator 4 Productive Forest Representation

Indicator Statement	Target and Variance
Percent productive forest by BEC variant represented within the non-harvestable land base.	<u>Target:</u> As per the table below <u>Variance:</u> 0%

Maintaining representation of a full range of ecosystem types is a widely accepted strategy to conserve biodiversity in protected areas and is suggested for landscapes managed for forestry. Most species, especially those for which knowledge is sparse or absent, are best sustained by ensuring that some portion of each distinct ecosystem type is represented in a relatively unmanaged state. Unmanaged stands act as a precautionary buffer against errors in efforts intended to sustain species in the managed forest. Unmanaged areas also help to sustain poorly understood ecosystem functions and provide an ecological baseline against which the effects of human activities can be compared based on the approach developed by, ecosystem representation is determined by evaluating the proportion of productive crown forest found in the non-harvested land base (NHLB), including parks and protected areas, but also including areas excluded from harvest for other reasons such as operability constraints.

An evaluation of ecological representation allows managers to identify the 'management footprint' on ecological units within a forest management unit. This in turn allows managers to prioritize management objectives (such as which units to emphasize OGMA placement, Wildlife Tree Patch targets and riparian reserves) and where to focus monitoring efforts.

Productive Forest Representation

BEC Variant	DFA Area (ha)	THLB Area (ha)	THLB Percent of DFA (%)	NHLB Area (ha)	NHLB Percent of DFA (%)	Approved Target (%)
AT	137,420	64	0.0%	553	0.4%	0.4%
BWBS dk1	129,526	76,054	58.7%	46,110	35.6%	35.6%
BWBS mw1	10,247	3,689	36.0%	5,953	58.1%	58.1%
BWBS wk2	21,097	12,442	59.0%	7,641	36.2%	36.2%
ESSF mv2	10,880	6,205	57.0%	3,873	35.6%	35.6%
ESSF mv3	314,568	200,277	63.7%	92,126	29.3%	29.3%
ESSF mv4	330,448	113,448	34.3%	152,437	46.1%	46.1%
ESSF mvp	92,940	2,489	2.7%	18,608	20.0%	20.0%
ESSF wc3	174,961	46,040	26.3%	68,444	39.1%	39.1%
ESSF wcp	58,320	1,359	2.3%	8,187	14.0%	14.0%
ESSF wk2	111,798	62,900	56.3%	39,488	35.3%	35.3%
SBS mk1	257,289	189,083	73.5%	41,785	16.2%	16.2%
SBS mk2	175,296	115,469	65.9%	37,831	21.6%	21.6%
SBS vk	6,720	4,798	71.4%	1,819	27.1%	27.1%
SBS wk1	8,872	6,766	76.3%	1,257	14.2%	14.2%
SBS wk2	226,617	154,520	68.2%	57,015	25.2%	25.2%
SBS mk	14,672	5,105	34.8%	7,201	49.1%	49.1%

Source: GIS

Indicator Discussion: As newer information becomes available (TSR updates to the CFLB, or the completion of Predictive Ecosystem Mapping), the results of that analysis will be compared to the current status indicated in the table above. Mackenzie's new TSR is expected to occur in 2012/13.

Indicator 5 Patch Size

Indicator Statement	Target and Variance
Percentage of blocks and roads harvested that meet the prescribed patch size target ranges or are trending towards the target range.	Target: 100% Variance: -30%

Patches often consist of even aged forests because most are the result of either a natural disturbance such as fire, wind or pest outbreaks, or from harvesting timber in a cutblock. Patches may be created through single disturbance events or through a series of events (i.e. a combination of natural disturbance and harvesting). Mature forests and younger forest patches represent a land base created from a history of disturbances, natural and otherwise. As such, forest stands and patches are often composed of a variety of species, stocking levels and ages. Currently, forest management practices have reduced the occurrence of many natural disturbance events, such as wildfire. In the absence of natural disturbance, timber harvesting is employed as a disturbance mechanism and thus influences the distribution and size ranges of forest patches in the same fashion as historical natural disturbance events. Harvesting activities serve to mimic natural disturbance events characteristic within the Mackenzie DFA. Past social constraints associated with harvesting and resulting patch size have lead to fragmentation of the landscape beyond the natural ranges of variability, which has developed over centuries from larger scale natural disturbance. In order to remain within the natural range of variability of the landscape and move toward sustainable management of the forest resource, it is important to develop and maintain patch size targets based on historical natural patterns. This indicator will monitor the consistency of harvesting patterns compared to the landscape unit group and the natural patterns of the landscape.

Patch Size

Signatory	Number of Blocks and roads harvested			Number of blocks and roads harvested that meet or are trending towards the patch size target ranges	%in DFA
	Blocks	Roads	Total		
Canfor	40	100	140	139	99.3%
BCTS	36	17	53	52	98.1%
TOTAL	176	117	193	191	99.0%

Source: May 2012 Analysis Results – See Appendix 1 for analysis tables.

Indicator Discussion: Blocks that are harvested for pest or disease (salvage) are considered to have met patch, as harvesting for forest health reasons takes precedence over patch size targets. More precise data was provided by adjacent licensees (Conifex, MK Fibre, Three Feathers Consortium) through the newly formed

Landscape Objectives Working Group (LOWG). The analysis is more robust than in previous years and the LOWG will work towards jointly managing Landscape Biodiversity

Indicator 6 Coarse Woody Debris

Indicator Statement	Target and Variance
The percent of cutblocks and roads harvested that exceed coarse woody debris requirements.	Target: 100% Variance: 0%

Coarse woody debris (CWD) as a habitat element provides: 1) nutrients for soil development, 2) structure in streams to maintain channel stability, 3) food and shelter for animals and invertebrates, and 4) growing sites for plants and fungi. Past forestry practices have encouraged the removal of CWD from sites for a number of economic and/or safety reasons, presumably to the detriment of biological diversity. We use this indicator following harvesting to quantify CWD retained in blocks, wildlife tree patches, riparian areas, and in areas of un-salvaged timber. Within the NHLB we assume that natural processes will result in the maintenance of appropriate levels of CWD.

Post-harvest CWD levels will be measured as a standard component of either the silviculture survey or residue and waste survey. The interim target for CWD was taken from the FRPA *Forest Planning and Practices Regulation, Sec. 68* default requirements (BC. Reg 14/2004). Although the PAG members felt that this number was inadequate to protect this element of biodiversity, they recognized that insufficient information exists to determine either the amount of CWD left behind after harvesting or the amount of CWD that occurs in natural pre-harvest stands. Even so, we expect significantly more CWD than the target is retained after harvest and have committed to developing a more comprehensive CWD strategy pending availability of more data supporting a new CWD regulation.

Coarse Woody Debris

Signatory	Number of Blocks harvested	Number of blocks harvested that exceed CWD requirements	%in DFA
Canfor	40	40	100%
BCTS	36	36	100%
TOTAL	76	76	100%

Source: Final harvest inspections, Incident Tracking Systems.

Indicator Discussion: This indicator applies to blocks only. On no road operations were there required coarse woody debris measures stated in any operational plans or site plans.

Indicator 7 Wildlife Trees

Indicator Statement	Target and Variance
Percentage of cutblocks that meet or exceed wildlife tree patch requirements.	Target: 100% Variance: 0%

Stand level retention, including wildlife tree patches, is managed by each signatory in the DFA on a site-specific basis. During the development of a cut block, retention areas are delineated based on a variety of factors. Stand level retention generally occurs along riparian features and will include non-harvestable and sensitive sites if they are present in the planning area. Stand level retention also aims to capture a representative portion of the existing stand type to contribute to ecological cycles on the land base. Retention level in each block is documented in the associated Site Plan, recorded in the signatories' respective database systems and reported out in RESULTS on an annual basis.

Wildlife Trees

Signatory	Total Number of Cutblocks Harvested	Number of Cutblocks Harvested exceeding WTP requirements	Overall %
Canfor	40	40	100.0%
BCTS	36	36	100.0%
TOTAL	76	76	100.0%

Source: Site Plans

Indicator Discussion:

Indicator 8 Riparian Management Area Effectiveness

Indicator Statement	Target and Variance
The percentage of forest operations consistent with riparian management area requirements as identified in operational plans and/or site plans.	Target: 100% Variance: 0%

Riparian features found in the field are assessed during the block lay-out stage to determine its riparian class and associated RRZ/RMZ. Appropriate buffers are then applied, considering other factors such as operability and windfirmness. Prescribed measures, if any, to protect the integrity of the RMA are then written into the Operational Plan. The target is a legal requirement. The target value of 100% has been established to reflect this and to ensure that all riparian management practices, specifically RRZ designation and management, continue to remain consistent with the pre-harvest operational plans.

Riparian Management

Signatory	Number of Forest Operations with Riparian Management Strategies identified in Operational Plans				Forest Operations Completed in Accordance with riparian management requirements	%in DFA
	Roads	Harvest	Silviculture	Total		
Canfor	100	40	3	143	143	100%
BCTS	26	33	3	62	61	98.4%
TOTAL	126	73	6	205	204	99.5%

Source: Operational Plans, Incident Tacking Systems.

Indicator Discussion: Re. BCTS 61/62: See ITS-TPG-2012-0137 and APN-TPG-2012-0226 for potential non-compliance due to site prep equipment entering 5m Machine Free Zone. This site was field visited by the PAG in June, 2012. It was also subject to a field visit by the BCTS external auditor in June 2012 while conducting a registration audit. It was determined to be a small occurrence and a good learning opportunity. No significant environmental damage arose from this incident.

Indicator 9 Sedimentation

Indicator Statement	Target and Variance
The percentage of identified unnatural sediment occurrences where mitigating actions were taken.	Target: 100% Variance: -5%

Sedimentation occurrences are detected by forestry personnel during stream crossing inspections, road inspections, silviculture activities, and other general activities. In addition, Canfor supervisors routinely fly their operating areas annually following spring freshet to look for any such occurrences. While in some situations the sites may have stabilized so that further sedimentation does not occur, in other cases mitigating actions may have to be conducted. This may involve re-contouring slopes, installing siltation fences, re-directing ditch lines, grass seeding, or deactivating roads.

Sedimentation

Signatory	Number of identified unnatural sediment occurrences	Number of identified unnatural sediment occurrences with mitigating actions taken	% in DFA
Canfor	0	0	100%
BCTS	2	2	100%
TOTAL	2	2	100%

Source: Inspection monitoring reports

Indicator Discussion: BCTS: No significant environmental impacts resulted from the 2 sedimentation incidents and mitigating actions were appropriate.

Indicator 10 Stream Crossings

Indicator Statement	Target and Variance
Percentage of stream crossings appropriately designed and properly installed and/or removed.	Target: 100% Variance: -5%

Forestry roads can have a large impact on water quality and quantity when they intersect with streams, particularly by increasing sedimentation into water channels. Sediment is a natural part of streams and lakes as water must pass over soil in order to enter a water body, but stream crossings can dramatically increase sedimentation above normal levels. Increased sedimentation can damage spawning beds, increase turbidity, and effect downstream water users. When stream crossings are installed and removed properly, additional

sedimentation may be minimized to be within the natural range of variation. Erosion control plans and procedures are used to ensure installations and removals are done properly. To calculate the success of this indicator it is important to ensure that a process is in place to monitor the quality of stream crossings, their installation, removal, and to mitigate any issues as soon as possible.

Stream Crossings

Signatory	Number of Stream Crossings			Number of Stream Crossings			% Total
	Installed	Removed	Total	Appropriately designed and properly installed	Properly removed	Total	
Canfor	7	1	8	7	1	8	100%
BCTS	4	1	5	4	1	5	100%
TOTAL	11	2	13	11	2	13	100%

Source: Inspection monitoring reports

Indicator Discussion:

Indicator 11 Peak Flow Index

Indicator Statement	Target and Variance
Percent of watersheds containing approved or proposed development with Peak Flow Index calculations completed.	Target: 100% Variance: 0%

The peak flow index is an indicator that indicates the potential effect of harvested areas on water flow in a particular watershed. The H60 is the elevation for which 60% of the watershed area is above. The ECA or "Equivalent Clearcut Area" is calculated from the area affected by logging and the hydrologic recovery of that area due to forest re-growth. After an area has been harvested, both winter snow accumulation and spring melt rates increase. This effect is less important at low elevations, since the snow disappears before peak flow. Harvesting at high elevations will have the greatest impact and is, therefore, of most concern. As a result, areas harvested at different elevations are weighted differently in the calculation of peak flow index. Most hydrologic impacts occur during periods of the peak stream flow in a watershed. In the interior of British Columbia, peak flows occur as the snowpack melts in the spring.

With PFI calculations now complete, the watersheds will next be evaluated to establish the watershed sensitivity and thereby the PFI risk (low to high). With the PFI risk ratings established, harvesting plans will have to consider the impact harvesting will have on the watershed in which it occurs. The goal, in watersheds with a high PFI risk rating, is to either postpone harvesting, or refer to a qualified registered professional for a detailed review.

Peak Flow Index

Licensee	Number of watersheds with harvest activities in the DFA	Number of those watersheds with Peak Flow Index calculations	Total % DFA
Canfor	14	14	100%
BCTS	16	16	100%
Conifex	3	3	100%
Mackenzie Fibre	9	9	100%
TOTAL	23*	23*	100%

Source: GIS analysis – See Appendix 1 for a table with the current Peak Flow Index status of all Watersheds within the DFA.

Indicator Discussion: This reporting period we had 2 non-signatory licensees harvesting within the DFA. As a result of this we also modeled the watersheds using their depletion data to ensure we arrived at an accurate PFI. *There were many watersheds with multiple licensees harvesting, therefore the total is not the sum of the number of watersheds with harvest activities in the DFA per licensee.

Indicator 12 Road Re-vegetation

Indicator Statement	Target and Variance
Percentage of road construction or deactivation projects where prescribed re-vegetation occurs within 12 months of disturbance.	Target: 100% Variance: -10%

This indicator was chosen as a way to assess our ability to minimize or at least reduce the anthropogenic effect of forest roads on adjacent ecosystems. In keeping with the common assumption of coarse-and medium-resolution biodiversity, our underlying assumption with this indicator was – re-vegetating roads will reduce the potential anthropogenic effects that roads have on adjacent ecosystems by minimizing potential for silt runoff or

slumps, the amount of exposed soil, the potential for invasive plants to become established, and returning at least a portion of forage and other vegetation to conditions closer to those existing prior to management.

Road Re-vegetation

Signatory	Total Number of Projects Where Re-vegetation is Prescribed	Number of Prescribed Re-vegetation Projects Completed within 12 months of disturbance	% in DFA
Canfor	0	0	100%
BCTS	0	0	100%
TOTAL	0	0	100%

Source: Licensee tracking systems

Indicator Discussion: BCTS: No permanent roads qualified in this population. Canfor had no scheduled grass seeding during the reporting period.

Indicator 13 Road Environmental Risk Assessment

Indicator Statement	Target and Variance
Percentage of planned roads that have an environmental risk assessment completed.	<u>Target:</u> 100% <u>Variance:</u> -10%

Environmental risk assessments provide a indicator of “due diligence” in avoiding accidental environmental damage that has potential to occur from forest development in conditions of relatively unstable soil. Through the implementation of risk assessments, we expect to maintain soil erosion within the range that would normally occur from natural disturbance events under unmanaged conditions. Our assumption was – the more we can resemble patterns of soil erosion existing under unmanaged conditions, the more likely it will be that we do not introduce undue anthropogenic effects, from road construction, on adjacent ecosystems. The completion of environmental risk assessments on roads is completed by field staff during road layout and is inputted into the signatories’ respective databases. The assessments provide the basis for future road inspection requirements and highlight areas of special concern that may require professional geotechnical or design work. All assessments are completed in accordance to documented procedures.

Road Environmental Risk Assessment

Signatory	Total Number of roads constructed	Number of constructed roads with environmental risk assessments completed	% in DFA
Canfor	100	100	100%
BCTS	72	72	100%
TOTAL	172	172	100%

Source: Genus

Indicator Discussion: BCTS: All roads constructed on-block or access during the reporting period. Canfor built 100 roads during the reporting period; all had risk assessments done at time of layout.

Indicator 14 Species within the DFA

Indicator Statement	Target and Variance
Percentage of blocks and roads harvested that adhere to management strategies for Species at Risk, Ungulate winter ranges, and other local species of importance.	<u>Target:</u> 100% <u>Variance:</u> -10%

Fundamental to the correct identification of species and habitats is the incorporation of appropriate management strategies where forest activities have the potential to impact species and habitats. Identification of those animals, invertebrates, bird species, vascular plants, and plant communities that have been declared to be at risk is crucial if they are to be conserved. Appropriate personnel are key staff and consultants that are directly involved in operational forest management activities. By implementing training to identify species within the DFA the potential for disturbing these species and their habitat decreases. Maintaining all populations of native flora and fauna in the DFA is vital for sustainable forest management, as all organisms are components of the larger forest ecosystem.

There are various sources to draw upon when developing the comprehensive list of species that are legally protected or species of importance within the DFA. The list of species in Appendix C includes species from the following sources:

1. Species at Risk Act
2. Legally established Ungulate Winter Ranges

3. Local species of importance.

Incorporation of local species of importance recognizes potential species that are not legally protected. Local species of importance can be proposed by First Nations, PAG members, the licensees, or by members of the public.

Species within the DFA

Signatory	Number of Forest Operations that coincide with Species at Risk, Ungulate Winter Ranges, or other local species of importance as identified in Operational Plans				Number of Forest Operations with Species at Risk, Ungulate Winter Ranges, or other local species of importance as identified in Operational Plans that adhere to specific management strategies.	% in DFA
	Roads	Harvesting	Silviculture	Total		
Canfor	0	0	0	0	0	100%
BCTS	6	6	0	12	12	100%
TOTAL	6	6	0	12	12	100%

Source: Operational Plans

Indicator Discussion:

Indicator 15 Sites of Biological Significance

Indicator Statement	Target and Variance
Percentage of blocks and roads harvested that adhere to management strategies for sites of biological significance.	Target: 100% Variance: 110%

Sites of biological significance include areas that are critical for wildlife habitat, sensitive sites, and unusual or rare forest conditions or communities. Specific management strategies may be required to ensure that these sites are maintained within the DFA. This indicator will ensure that specific management (fine filter) strategies are developed to conserve and manage sites of biological significance. Many types of sites of biological significance are sufficiently known to allow the development of special management areas, or prescribe activities that will appropriately manage these areas. The management strategies will be based on information already in place (e.g., National Recovery Teams of Environment Canada, IWMS Management Strategy), legislation (provincial and national parks), Land and Resource Management Plans (LRMPs), and recent scientific literature. Management strategies will be implemented in operational plans such as site plans to ensure the protection of these sites. Training of appropriate personnel in the identification of these sites of biological importance is critical to the management and protection of these sites. Appropriate personnel include key signatory staff and consultants that are directly involved in operational forest management activities. Having appropriate personnel trained to identify sites of biological significance will reduce the risks of forestry activities damaging these sites.

This indicator evaluates the success of implementing specific management strategies for sites of biological significance as prescribed in operational, tactical and/or site plans. Operational plans such as site plans describe the actions needed to achieve these strategies on a site specific basis. Once harvesting and other forest operations are complete, an evaluation is needed to determine how well these strategies were implemented. Developing strategies and including them in operational, tactical and/or site plans are of little use if the actions on the ground are not consistent with them. Tracking this consistency will ensure problems in implementation are identified and corrected in a timely manner.

Sites of Biological Significance

Signatory	Number of Forest Operations with Sites of Biological Significance Management Strategies Identified in Operational Plans				Forest Operations Completed in Accordance with Identified Strategies	% in DFA
	Roads	Harvesting	Silviculture	Total		
Canfor	0	0	0	0	0	100%
BCTS	1	1	0	2	2	100%
TOTAL	1	1	0	2	2	100%

Source: Operational Plans

Indicator Discussion:

Indicator 16 Soil Conservation

Indicator Statement	Target and Variance
Percentage of forest operations consistent with soil conservation standards as identified in operational plans and/or site plans.	Target: 100% Variance: 0%

Conserving soil function and nutrition is crucial for sustainable forest management. To achieve this, forest operations have limits on the amount of soil disturbance they can create. These limits are described in legislation in the Forest Planning and Practices Regulation, section 35. Soil disturbance is defined in this SFM plan as disturbance caused by a forest practice on an area, including areas occupied by excavated or bladed trails of a temporary nature, areas occupied by corduroy trails, compacted areas, and areas of dispersed disturbance. Soil disturbance is expected to some extent from timber harvesting or silviculture activities, but these activities are held to soil conservation standards in Site Plans (where they are more commonly known as "soil disturbance limits"). The Site Plan prescribes strategies for each site to achieve activities and still remain within acceptable soil disturbance limits.

Soil information is collected as a component of site plan preparation, and soil conservation standards are established based on the soil hazards for that block. To be within those limits there are several soil conservation strategies currently used. Forest operations may be seasonally timed to minimize soil disturbance. For example, fine-textured soils such as clays and silts are often harvested when frozen to reduce excessive compaction. EMS prework forms require equipment operators to be aware of soil conservation indicators outlined in the site plans. Once an activity is complete the final EMS inspection form assesses the consistency with site plan guidelines. If required, temporary access structures are rehabilitated to the prescribed standards. Road construction within blocks is minimized, and low ground pressure equipment may be used where very high soil hazards exist.

Soil Conservation

Signatory	Number of Forest Operations				Forest Operations Completed in Accordance with Soil Conservation Standards	% in DFA
	Roads	Harvesting	Silviculture	Total		
Canfor	100	40	3	143	143	100%
BCTS	26	36	3	65	65	100%
TOTAL	126	76	6	208	208	100%

Source: Operational Plans

Indicator Discussion:

Indicator 17 Terrain Management

Indicator Statement	Target and Variance
The percentage of forest operations consistent with terrain management requirements as identified in operational plans and/or site plans.	Target: 100% Variance: 0%

Some areas subject to forest operations occur on slopes that warrant special terrain management requirements in operational plans (usually the site plan). These unique actions are prescribed to minimize the likelihood of landslides or mass wasting. Terrain Stability Assessments (TSA) are completed on areas with proposed harvesting or road development that has been identified as either unstable or potentially unstable. The recommendations of the TSA are then integrated into the site plan or road layout/design and implemented during forest operations.

Terrain Management

Signatory	Number of Forest Operations with Terrain Management Requirements Identified in Operational Plans				Forest Operations Completed in Accordance with Requirements	% in DFA*
	Roads	Harvesting	Silviculture	Total		
Canfor	2	2	0	4	4	100%
BCTS	1	2	0	3	3	100%
TOTAL	3	4	0	7	7	100%

Source: Operational Plans

Indicator Discussion:

Indicator 18 Reportable Spills

Indicator Statement	Target and Variance
The number of EMS reportable spills	Target: 0 Variance: ≤ 5

All signatories currently have procedures in place for reducing and reporting spills. EMS checklists and monitoring procedures require the proper storage, handling, and labeling of controlled products. Such indicators include proper storage tank construction, the use of shut off valves, availability of spill kits, and the construction of berms where required. EMS plans also include the indicators to be taken in the event of a spill.

Reportable Spills

Signatory	Number of EMS Reportable Spills						
	Petroleum Products	Pesticides	Antifreeze	Battery Acid	Grease	Paints and Solvents	Total
Canfor	0	0	0	0	0	0	0
BCTS	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0

Source: Signatory Incident Tracking System

Indicator Discussion:**Indicator 19 Site conversion**

Indicator Statement	Target and Variance
Area of THLB converted to non-forest land used through forest management activities.	Target: <5% Variance: 0%

In addition to maintaining the resources necessary for sustaining the resiliency of forest ecosystems, a stable land base within which productive capability is assessed is also required. In order to assess the maintenance of the productive capability of the land base, this indicator specifically tracks the amount of productive land base loss due to various non-forest uses. Removal of the productive land base occurs as a result of permanent access structures, including roads, landings and gravel pits, as well as converting forested areas to non-forest land use, such as range, seismic lines and other mineral exploration.

Conversion of the THLB to non-forest land also has implications for carbon sequestration. A permanent reduction in the forest means that the removal of carbon from the atmosphere and carbon storage will be correspondingly reduced. The data that is required for monitoring is the number of hectares of productive forest area lost due to conversion to a non-forest use. This data collection and analysis is essentially a GIS exercise that can be completed at 5 year intervals concurrently with the Timber Supply Review process.

Site Conversion

Signatory	Total THLB	Area Converted to Non-forest Land	Percent of THLB Area
Canfor	624,762	18,877	3.0%
BCTS	411,007	19,570	4.8%
TOTAL	1,035,770	38,447	3.7%

Source: GIS analysis

Indicator Discussion: BCTS: Took the area calculated in the last annual report (19460 ha) and added on 10979m of other road @ 12m width, 22714 m of new RP on-block road @ 16 meters width and 25219 m of new FSR access road @ 24 m width (another 110 ha hectares for a new total of 19570 ha.). Canfor: Added 115.4 ha with roads and SUPs.

Indicator 20 Permanent Access Structures

Indicator Statement	Target and Variance
The percentage of gross cutblock area occupied by total permanent access structures.	Target: <5% Variance: +1%

This indicator indicates the amount of area developed as permanent access structures (PAS) within cutblocks, in relation to the area harvested during the same period. Limits are described in legislation in the Forest Planning and Practices Regulation, section 36. Permanent access structures include roads, bridges, landings,

gravel pits, or other similar structures that provide access for timber harvesting. Area that is converted to non-forest, as a result of permanent access structures and other development is removed from the productive forest land base and no longer contributes to the forest ecosystem. Roads and stream crossings may also increase risk to water resources through erosion and sedimentation. As such, minimizing the amount of land converted to roads and other structures protects the forest ecosystem as a whole.

Permanent Access Structures

Signatory	Total Cutblock Area Harvested	Total Cutblock Area in Permanent Access Structures	Percent
Canfor	2163.2	77.6	3.6
BCTS	2673.0	47.5	1.8
TOTAL	4836.2	125.1	2.6

Source: Operational Plans

Indicator Discussion:

Indicator 21 Communication of planned Deactivation Projects

Indicator Statement	Target and Variance
Percentage of off-block road deactivation projects that are communicated with applicable First Nations and Stakeholders.	Target: 100% Variance: -10%

The forest is utilized by a variety of users. Access to the forest resource is important to First Nations, stakeholders, and the general public. Deactivation of off-block access roads can limit or remove access to the forest for other users. Where the signatories need to deactivate off-block roads, communication of their intention is required. Our assumption with this indicator is simply that – by increasing communication regarding signatory deactivation plans among stakeholders, we can increase the efficiency of access to resources. For the purpose of this indicator, stakeholders include trappers, guides, private land owners, and woodlots. First Nations will also be communicated with where their consultative boundary overlaps the planned deactivation projects.

Communication of Planned Deactivation Projects

Signatory	Number of deactivation projects communicated to First Nations and Stakeholders	Total number of deactivation projects completed	Percent
Canfor	0	0	100.0%
BCTS	0	0	100.0%
TOTAL	0	0	100.0%

Source: Signatory communication records

Indicator Discussion: Canfor completed no off-block deactivation. BCTS: No BCTS FSR's were deactivated in the 2011/12 reporting period.

Indicator 22 Regeneration Delay

Indicator Statement	Target and Variance
Percent of standards units declared stocked prior to the regeneration date consistent with operational plans	Target: 100% Variance: -5%

Regeneration delay is defined in this SFM plan as the time allowed in a prescription between the start of harvesting in the area 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. There is a maximum permissible time allowed and comes from standards developed and/or approved by government. The regeneration delay period is usually within four years where planting is prescribed and seven years where the stand is expected to reforest naturally. Operationally, it is desirable as soon as possible post-harvest and the majority of blocks artificially regenerated (e.g. planted) meet regeneration delay within 2 years. Ensuring that all harvested stands meet the prescribed regeneration delay date within the specified time frame is an indication that the harvested area has maintained the ability to recover from a disturbance, thereby maintaining its resiliency and productive capacity. It also helps to ensure that a productive stand of trees is beginning to grow for use in future rotations. A regeneration survey is completed after planting to ensure adequate stocking of harvested blocks. The current status of this indicator was derived from a review of signatories' records for the reporting period.

Regeneration Delay

Signatory	Number of standards units required to meet Regeneration Date During Period	Number of standards units that Meet the Regeneration Date	% in DFA
Canfor	57.0	57.0	100.0%
BCTS	59.0	57.0	96.6%
TOTAL	116.0	114.0	98.3%

Source: Signatory silviculture records and/or RESULTS

Indicator Discussion: There were 3 other SU's of Canfor's that didn't technically meet regeneration delay, but were due to activities out of our control. The first being that a Camp was placed over one of them (BD1-BD1), Canfor is working to have obligations relieved for this. The other 2 that were not met were due to them being part of a Caribou Lichen study so they are SP exempt and therefore have no targets to be measured on.

Indicator 23 Free Growing

Indicator Statement	Target and Variance
Percent of standards units declared free growing prior to the late free growing assessment date.	Target: 100% Variance: -5%

A free growing stand is defined in this SFM plan as a stand of healthy trees of a commercially valuable species, the growth of which is not impeded by competition from plants, shrubs or other trees. The free growing status is somewhat dependent on the regeneration delay date of a forest stand and could be considered the next reporting phase. A free growing assessment is conducted on stands based on a time frame indicated in operational plans. The late free growing dates are established based on the biogeoclimatic classification of the site and the tree species prescribed for planting after harvest.

In order to fulfill mandates outlines in legislation, standards are set for establishing a crop of trees that will encourage maximum productivity of the forest resource (BC MOF 1995b). The free growing survey assesses the fulfillment of a Licensee's obligations to the Crown for reforestation and helps to ensure that the productive capacity of the forest land base to grow trees is maintained. Continued ecosystem productivity is ensured through the principle of free growing. This indicator illustrates the percentage of harvested blocks that meet free growing obligations across the DFA.

Free Growing

Signatory	Number of Standards Units Required to Meet Free Growing During Period	Number of Standards Units declared Free Growing	% in DFA
Canfor	185.0	185.0	100.0%
BCTS	13.0	13.0	100.0%
TOTAL	198.0	198.0	100.0%

Source: Signatory silviculture records and/or RESULTS

Indicator Discussion:

Indicator 24 Prioritizing harvest of damaged stands

Indicator Statement	Target and Variance
Percentage of area (ha) harvested that are damaged or considered a high risk to stand damaging agents.	Target: 100%. Variance: -20%.

Damaging agents are considered to be biotic and abiotic factors (fire, wind, insects etc.) that reduce the net value of commercial timber. To reduce losses to timber value it is necessary to ensure that if commercially viable timber is affected by damaging agents, that the timber is recovered before its value deteriorates. At the time of this SFMP's preparation, the most serious stand damaging agent in the Mackenzie DFA is the Mountain Pine Bark Beetle, which has killed millions of mature, commercially viable lodgepole pine. Prioritizing infested stands for treatment can contribute to sustainable forest management in several ways. Removing infested trees can slow the spread of beetles to adjacent un-infested stands and allow Licensees to utilize trees before they deteriorate. Also, once harvesting is complete the area can be replanted, turning an area that would have released carbon through the decomposition of dead trees into the carbon sink of a young plantation.

Treating areas with stand damaging agents will provide other societal benefits. Burned and diseased killed stands may be aesthetically unpleasing, and their harvesting and reforestation will create a more pleasing landscape. Windthrown stands restrict recreational use and can foster the growth of insect pests such as the spruce bark beetle. Thus, prioritizing areas with stand damaging agents for treatment will help to maintain a

more stable forest economy and achieve social benefits through enhanced aesthetics and recreational opportunities.

Prioritizing Harvest of Damaged stands

Signatory	Number of hectares harvested in the stands considered a high risk to stand damaging agents	total number of hectares harvested during the reporting period	% in DFA
Canfor	1589.9	1897	83.8%
BCTS	1945.1	2102.4	92.5%
TOTAL	3,535	3,999	94.3%

Source: Signatories Operational Plans

Indicator Discussion: BCTS: Calculation based on NAR. Canfor also calculated using NAR, Canfor had a couple permits that were not considered “damaged” that were on the verge of expiry, therefore needed to be harvested this year.

Indicator 25 Harvest volumes

Indicator Statement	Target and Variance
Actual harvest volume compared to the apportionment across the DFA over each 5-year cut control period.	Target: 100%. Variance: +/- 10%.

To be considered sustainable, harvesting a renewable resource such as timber cannot deteriorate the resource on an ecological, economic or social basis. It is expected that certain resource values and uses will be incompatible; however, a natural resource is considered sustainable when there is a balance between the various components of sustainability. During Allowable Annual Cut (AAC) determination, various considerations are examined including the long term sustainable harvest of the timber resource, community stability, wildlife use, recreation use, and the productivity of the DFA. The AAC is generally determined every five years by the Chief Forester of British Columbia, using a number of forecasts to assess the many resource values that need to be managed. On behalf of the Crown, the Chief Forester makes an independent determination of the rate of harvest that is considered sustainable for a particular Timber Supply Area (TSA). The Mackenzie DFA is part of the larger Mackenzie TSA, comprising about 42% of the TSA area.

The harvest level for a TSA must be met within thresholds that are established by the Crown. By following the AAC determination, the rate of harvest is consistent with what is considered by the province to be sustainable ecologically, economically and socially within the DFA. As stated above, the Chief Forester makes a determination of the rate of harvest for a particular TSA. The licensee then by law must achieve the AAC within the specified thresholds. In the case of BC Timber Sales, they are mandated to offer timber sale licenses matching the allocated AAC. Each truckload of wood is assessed and accounted for at an approved Ministry of Forests and Range (MOFR) scale site. The MOFR uses this information to apply a stumpage rate to the wood, and monitors the volume of wood harvested and compares it to the AAC thresholds. BC Timber Sales tracks volume for timber sale licenses issued based on volume cruised, and compares this to its AAC allocation. Canfor tracks the scaled volume of wood harvested.

The volume of timber actually harvested within the DFA will be determined annually by a review of MOFR timber scale billing summaries for the period of January 1st to December 31st each year, on an annual basis. BC Timber Sales will track the volume sold annually relative to their apportionment. The signatories will report out on the volume harvested (Canfor) or sold (BCTS) over the previous 5 year period. With each annual report, the actual reported years within the 5 year period will change as the first year drops off and the current year is added on.

Harvest Volumes

Signatory	Volume Harvested (CFP) or Sold (BCTS)						5 year Apportionment	Percent of 5 year cut in DFA
	Year 1	Year 2	Year 3	Year 4	Year 5	Total		
	07-08	08-09	09-10	10-11	11-12			
Canfor	491,314	105,011	127,478	526,900	725,114	1,975,817	5,414,520	36.5%
BCTS	787,404	377,673	170,630	346,512	270,961	1,953,180	3,594,430	54.3%
Total	1,278,718	482,684	298,108	873,412	996,075	3,928,997	9,008,950	43.6%

Source: Signatory harvest records, HBS, and/or Sales Schedules

Indicator Discussion: A common method for establishing targets is to benchmark the current harvest levels and extrapolate to the next 5 to 10 years. However, the existing mountain pine beetle epidemic in the DFA and the potential for increased harvest levels make benchmarking difficult and unpredictable. TSR for Mackenzie has been delayed significantly. New TSR information may be available during 2012/13.

For the 2011-2012 reporting period both Canfor and BCTS failed to meet this indicator once again, and due to the 5 year rolling average, results will get worse before they get better likely for 1 more year. It should be mentioned that the future is looking positive, markets are strengthening and Canfor is planning to log its entire quota of 1,082,904m³ in 2012/13 and it is expected that sales will be better for BCTS as well. Note: A total volume of 540,594m³ was offered for bid in Mackenzie by BCTS during the 2011/12 reporting period, with only 270,961m³ being purchased.

Indicator 26 First-Order Wood Products

Indicator Statement	Target and Variance
The number of first-order wood products produced from trees harvested from the DFA.	Target: 5 Variance: -2

This indicator helps to show how forest management activities can contribute to a diversified local economy based on the range of products produced at the local level. Forest management's contribution to multiple benefits to society is evident through this indicator, as well as an indication of the level of diversification in the local economy. First order wood products are often used to supply value-added manufacturers with raw materials for production, such as pre-fabricated houses components. These provisions help to maintain the stability and sustainability of socio-economic factors within the DFA. By ensuring a large portion of the volume of timber harvested in the DFA is processed into a variety of products at local facilities, the local economy will remain stable, diverse, and resilient.

First-Order Wood Products

Signatory	Sawlogs	Pulp Logs	House logs	Lumber	Custom cut lumber	Trim Blocks	Pulp chips	OSB strands	Hog	Wood shavings	Plywood	Veneer	Pole Logs	Railway tie logs	Sawdust	Instruments	Finger joint	Total
Canfor	1	1	0	1	0	1	1	0	1	1	0	0	1	0	1	0	0	9
BCTS	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
TOTAL	1	1	0	1	0	1	1	0	1	1	0	0	1	0	1	0	0	9

Source: Canfor: Site Superintendent communication/contractor communications.

Indicator Discussion: Primary and by-products sold to other local manufacturing facilities were counted. If BCTS and Canfor both produced the same product it was only counted once, as it is only 1 product.

Indicator 27 Local Investment

Indicator Statement	Target and Variance
The percent of money spent on forest operations and management on the DFA provided from local suppliers.	Target: 30% Variance: -5%

Forests provide many ecological benefits but they also provide substantial socio-economic benefits. In order to have sustainable socio-economic conditions for local communities associated with the DFA, local forest related businesses should be able to benefit from the work that is required in the management of the DFA.

Furthermore, for small forestry companies to contribute to and invest in the local economy there must be assurances that there will be a consistent flow of work. In the same way that larger licensees depend on a secure flow of resources to justify investment in an area, small businesses depend on a sustained flow of opportunities to develop and invest in the local community.

Local is defined in this SFMP as the communities of Mackenzie, McLeod Lake, Germanson Landing, Manson Creek, Tsay Keh Dene, and Fort Ware. The total dollar value of goods and services purchased within the local communities will be calculated relative to the total dollar value of all goods and services used. This calculation will be used to derive the percentage of money spent on forest operations and management of the DFA from

local suppliers. Woodlands employee salaries are considered goods purchased where the employee lives within the local area and therefore contribute to community stability.

Forest Operations and Management consider all money spent within the signatory's woodlands departments, excluding stumpage. Harvesting and road building costs, where applicable, will be included in the total.

Local Investment

Signatory	Money spent in local area on Forest operations and management	Total money spent on forest operations and management	% in DFA
Canfor	\$13,566,939.11	\$37,495,636.16	36.18%
BCTS	\$958,171.02	\$1,280,782.87	75%
TOTAL	\$14,525,110.13	\$38,776,419.03	37%

Source: Signatories accounting records

Indicator Discussion:

Indicator 28 Contract Opportunities to First Nations

Indicator Statement	Target and Variance
The number of contract opportunities with First nations within the DFA.	Target: >5 Variance: -2

This indicator is intended to monitor the impacts of forest industry and government activities on the ability of First Nations to access forestry related economic opportunities. At present, this indicator is not intended to assess how successful First Nations are at taking advantage of the opportunities. BCTS provides opportunities for all eligible bidders including First Nations. Canfor has explored forestry related opportunities with First Nations in the past. Capacity amongst the First Nations to take advantage of opportunities will likely have to be addressed in order for available opportunities to be acted upon. This indicator tracks the existence of opportunities available.

Contract Opportunities to First Nations

Signatory	Contract Opportunities							Total for DFA
	Employment	Road Building & Deactivation	Other Volume Purchased	Logging	Silviculture Forestry	Other Contracts	Management Services	
Canfor	0	0	0	3	6	0	0	9
BCTS	0	6	0	10	5	0	0	19
TOTAL	0	6	0	13	11	0	0	30

Source: Signatory contract records

Indicator Discussion:

Indicator 29 Satisfaction (PAG)

Indicator Statement	Target and Variance
The average overall percent of the PAG's satisfaction with PAG meeting process.	Target: 100% Variance: -20%

The PAG is one of the key elements of public involvement in the SFM process. The Mackenzie PAG provides guidance, input and evaluation during development of the SFMP. It is also instrumental in maintaining links to current local values and forest resource uses within the DFA. Therefore, it is important that the signatories have a positive and meaningful working relationship with the PAG, where the signatories are able to respond to all issues and concerns the PAG may have during the process. This indicator will use an average of the PAG meeting evaluation forms to determine the level of satisfaction of the PAG with the public participation process.

Following all PAG meetings to date, PAG participants completed meeting evaluations. One question is in the PAG meeting evaluation form to address this indicator which asked participants "Your overall satisfaction with PAG process?" This indicator is specific to responses to questions M10, M11, and M12 combined.

PAG Satisfaction

Mackenzie DFA SFM Plan Public Advisory Group Meeting Evaluation Question									
	Amount and timing of information: Question MQ10 on Oct 26 Form and Question A2 on Mar 7 Form			Meeting satisfaction: Question MQ11 on Oct 26 Form and Question A3 on Mar 7 Form			PAG Process: Question MQ12 on Oct 26 form and Question A11 on Mar 7 Form		
Meeting Date	Score	Percent (score / 5)	Variance (from 100%)	Score	Percent (score / 5)	Variance (from 100%)	Score	Percent (score / 5)	Variance (from 100%)
10/26/2011	4.4	88.0%	12.0%	4.4	88.0%	12.0%	4.6	92.0%	8.0%
3/7/2012	4.3	86.0%	14.0%	4.7	94.0%	6.0%	4.2	84.0%	16.0%
Total	4.4	87.0%	13.0%	4.6	92.0%	8.0%	4.4	88.0%	12.0%

Source: PAG satisfaction surveys

Indicator Discussion: A new PAG questionnaire was introduced in the last PAG meeting of the 2011/12 Reporting Period. Questions similar to the old questionnaire were utilized in averaging the overall PAG response of MQ 10, 11 and 12. In addition, it is recognized that PAG interest is waning in Mackenzie as reflected in meeting attendance and frequency. PAG recruitment is a focus of the LSC and numerous attempts (poster in the communities, cold calls to specific interest groups and sectors, etc.) have been made to recruit more PAG members. Please refer to LSC documentation on these attempts.

Indicator 30 Input into Forest Planning

Indicator Statement	Target and Variance
The number of opportunities for the public and/or stakeholders to provide meaningful input into forest planning.	Target: 6 Variance: -2

Forestry activities can impact a wide section of the public and individual stakeholders within the DFA. This indicator was designed to monitor the signatory's success at providing effective opportunities to residents and stakeholders to express concerns and be proactively involved in the planning process. This involvement may include the identification of areas of interest, definition of the nature of their interest in the land base, and any specific forestry activity that may impact their specific interests. This process ensures that when forestry activities are planned, information is exchanged in an effective and timely manner, so as to resolve potential conflicts before they occur. This process will help to identify the public values, interests and uses of the forest that will be considered within the signatories planning framework.

Stakeholders include the following forest sectors; trappers, guide outfitters, water license holders, range tenure holders, woodlot owners, private land owners, other licensees, and specific government agencies. Opportunities for input into forest planning will be offered to stakeholders where their tenured area coincides with the signatories planned activities.

Input into Forest Planning

Opportunity	The Number of Opportunities For Public And Stakeholders			
	Canfor	BCTS	Joint	Total
FSP ads	1	0	0	1
FSP letters to stakeholders	1	1	0	2
LRMP meetings	0	0	0	0
PMP original ads	0	0	0	0
PMP letters to stakeholders	1	0	0	1
PMP signage	0	0	0	0
Other ads (deactivation plans)	0	0	0	0
Field tours	0	0	0	0
Newsletters	0	0	0	0
Open houses	0	0	1	1
PAG Meetings	0	0	2	2
Documented meetings	1	0	0	1
Documented phone calls	1	0	0	1
Other - Operational referrals	1	1	0	2
TOTAL	6	2	3	11

Source: Signatory database/tracking systems.

Indicator Discussion: Both BCTS and Canfor had many correspondences with members of the public including trappers, guides, general public as well as First Nations throughout the reporting period.

Indicator 31 Public and Stakeholder Concerns

Indicator Statement	Target and Variance
The number of operational concerns raised by the public and/or stakeholders that are considered and incorporated into operational and/or tactical plans.	<u>Target:</u> 100% <u>Variance:</u> -10%

All signatories solicit feedback for their public forest management plans in the DFA. As mentioned in previous indicators, public involvement is an important aspect of SFM as it promotes inclusiveness in how Crown forests are managed. Considering a diverse range of opinions and concerns will result in operational forest management decisions that consider views other than those of the forest industry. A forest industry that respects public and stakeholder input will maintain the support of the public, creating a more economically stable and open forest economy. Operational concerns from the public may be provided in many ways, including written letters, e-mails, or faxes to the signatories. There may also be written comments made during an in-person or telephone meeting between a staff member and the person providing comment. This indicator will compare the number of operational concerns that have been acted on relative to the total number of operational concerns raised. Operational plans are generally FSPs. Tactical plans can include AIAs, operating plans, and cutblock and road referrals.

Public and Stakeholder Concerns

Signatory	Number of concerns brought forward that have been considered and incorporated into operational plans	Number of operational concerns brought forward	Percent
Canfor	3	3	100%
BCTS	7	7	100%
TOTAL	10	10	100%

Source:

Indicator Discussion:

Indicator 32 Access to SFM information

Indicator Statement	Target and Variance
The number of opportunities provided annually for access to SFM related documents.	Target: 3 Variance: 0

With this indicator we intend to monitor our effort to ensure effective and comprehensive distribution of the SFMP, annual reports, and audit results for the Mackenzie DFA. In order to gain trust and confidence in the SFMP process, it must be an open and transparent process. By ensuring access to the Plan, annual reports, and audit results, the results of our efforts in achieving sustainable forestry and continuous improvement can be clearly seen and monitored by the public, stakeholders, and First Nations. In this manner, the public, stakeholders and First Nations can hold the signatories accountable for achieving the desired results and have confidence that forest resources are being managed sustainably.

Access to SFM Information

Opportunity	The Number of Distribution/Access Opportunities			
	Canfor	BCTS	Joint	Total
Newsletters	0	0	0	0
Open houses/Trade Shows	0	0	1	1
SFM/PAG Meetings	0	0	2	2
Website	1	1	0	2
Distribution of SFM Information	0	0	1	1
TOTAL	1	1	4	6

Source: Signatory database and tracking systems, planning forester documentation.

Indicator Discussion:

Indicator 33 SFM Educational Opportunities

Indicator Statement	Target and Variance
The number of SFM educational opportunities and interactions provided.	Target: 2 Variance: 0

This indicator was designed to monitor the signatories' success at providing training and educational opportunities in sustainable forest management. SFM relies on residents and stakeholders making informed decisions on forest management. To achieve this, it is incumbent on the signatories to ensure the public are sufficiently informed about SFM to make the choices we request of them. The indicator is intended to ensure that the signatories provide the required opportunities for residents and stakeholders to learn about SFM. It is anticipated that educational opportunities will come in the form of open houses, public presentations, PAG meetings, the Mackenzie Trade Fair, and field tours of the signatory's operations.

SFM Educational Opportunities

Opportunity	The Number of SFM Educational Opportunities			
	Canfor	BCTS	Joint	Total
Field tours	0	0	0	0
Newsletters	0	0	0	0
Open houses	0	0	0	1
Presentations	0	0	0	0
PAG Meetings	0	0	2	3
Trade Shows, etc.	0	0	1	1
TOTAL	0	1	3	3

Source: Planning forester documentation.

Indicator Discussion:

Indicator 34 Heritage Conservation

Indicator Statement	Target and Variance
Percentage of forest operations consistent with the Heritage Conservation Act.	Target: 100% Variance: 0%

The protection of cultural heritage values assures they will be identified, assessed and their record available to future generations. A cultural heritage value is a unique or significant place or feature of social, cultural or

spiritual importance. It may be an archaeological site, recreation site or trail, cultural heritage site or trail, historic site or a protected area. Cultural heritage values often incorporate First Nation's heritage and spiritual sites, but they can also involve features protected and valued by non-Aboriginal people. Maintenance of cultural heritage values is an important aspect to sustainable forest management because it contributes to respecting the social and cultural needs of people who traditionally and currently use the DFA for a variety of reasons.

The indicator is designed to ensure that operational plans with identified strategies to conserve cultural heritage values have those strategies implemented on the ground. Tracking the level of implementation will allow the signatories to evaluate how successful this implementation is and improve procedures if required.

Heritage Conservation

Signatory	Total Number of Forest Operations that have associated sites protected under the Heritage Conservation Act (pre 1846)				Number of Forest Operations Completed in Accordance with the Heritage Conservation Act	Percent
	Roads	Harvesting	Silviculture	Total		
Canfor	0	0	0	0	0	100.0%
BCTS	1	2	0	3	1	100.0%
TOTAL	1	2	0	3	3	100.0%

Source: Signatory operational plans

Indicator Discussion:

Indicator 35 First Nations Input into Forest Planning

Indicator Statement	Target and Variance
The number of opportunities for First Nations to provide meaningful input into our planning processes where active operations are within their respective traditional territories.	Target: ≥ 2 per First Nation Variance: 0

This indicator was designed to list and report out on all documented opportunities provided to First Nations people to be involved in forest management planning processes. Incorporation of First Nations people and their unique perspective into the forest planning process is an important aspect of SFM. This indicator will contribute to respecting the social, cultural and spiritual needs of the people who traditionally and currently use the DFA for the maintenance of traditional aspects of their lifestyle. The Mackenzie SFM PAG is a process designed to identify public values and objectives within the DFA. Within the PAG process, First Nations has been identified as an important sector for representation.

First Nations Input into Forest Planning

Input Opportunity	Signatory	First Nation								Total
		Tsay Keh	Kwadacha	Takla Lake	Nak'azdli	McLeod Lake	West Moberly	Saulteau	Halfway River	
Operational Planning Referrals	Canfor	3	0	3	3	3	3	0	3	18
	BCTS	0	0	1	1	1	1	0	1	5
Open House Style Meetings	Canfor	0	0	0	0	0	0	0	0	0
	BCTS	0	0	0	0	0	0	0	0	0
Trade Shows	Canfor	0	0	0	0	1	0	0	0	1
	BCTS	0	0	0	0	0	0	0	0	0
Formal Operational Meetings	Canfor	1	1	1	1	1	1	1	1	8
	BCTS	1	1	1	1	1	1	1	1	8
Pest Management Prescriptions	Canfor	0	0	0	0	1	0	0	0	1
	BCTS	0	0	0	0	0	0	0	0	0
FSP referrals / Consultation	Canfor	1	1	1	1	1	1	1	1	8
	BCTS	0	0	0	0	1	1	0	1	3
TOTAL		7	1	1	1	1	1	1	1	1

Source: Signatory communication records.

Indicator Discussion: Communication was in the form of information sharing for block planning, FSP amendments as well as chemical brushing.

Indicator 36 First Nations Concerns

Indicator Statement	Target and Variance
Percentage of operational concerns raised by First Nations that are considered and incorporated into operational and/or tactical plans.	<u>Target:</u> 100% <u>Variance:</u> -10%

Incorporating management strategies into the planning process in order to resolve issues raised by First Nations leadership is a key aspect to sustainable forest management. This indicator contributes to respecting the social, cultural heritage and spiritual needs of people who traditionally and currently use the DFA for the maintenance of traditional aspects of their lifestyle.

Forest planning can include information sharing for both operational and tactical plans. The FSP process is an example of operational plans referred to First Nations. AIAs, operating plans, cutblock and road referrals, and annual operating maps are examples of tactical plans that may be referred to First Nations. Active forest operations are considered to be current harvesting, road construction, and mainline deactivation projects, planned vegetation management projects, as well as forest planning of new cutblocks and roads.

First Nations Concerns

Signatory	Number of concerns brought forward that have been considered and incorporated into operational plans	Total number of operational concerns brought forward	Percent
Canfor	3	3	100%
BCTS	0	0	100%
TOTAL	3	3	100%

Source: Signatory communication records and operational, tactical, or site plans.

Indicator Discussion: A First Nation had a request for some special treatment of trails and culturally modified trees in the area, these concerns were built into the plans for these blocks.

Indicator 37 Non-timber Benefits

Indicator Statement	Target and Variance
Conformance with strategies for non-timber benefits identified in plans.	<u>Target:</u> No non-conformances for site level plans <u>Variance:</u> 0

For the purpose of this plan non-timber benefits include; resource features, range features as well as visual quality. Resource features are elements that have a unique importance because specific ecological factors exist in combination at one place and don't often occur similarly elsewhere. Examples of resource features are caves, karst, recreation sites or crown land used for research to name a few. These features are generally considered to have value to society so we assume that through conservation of these features we are contributing to social value. Range features are often used by ranchers to allow livestock to feed and thus very important to the ranching industry. Conservation of these areas will help to assure their availability in the future. Examples of such features include naturally occurring grass lands, naturally occurring barriers which contain livestock to a specific area as well as any area that a rancher has grazing or hay cutting permits on, or identified areas that may be suitable for such permits in the future. Visual quality is managed in order to maintain areas of perceived beauty within the DFA.

The signatories currently plan and design their activities and/or cutblocks so as to manage or adequately protect non-timber benefits when they become known. Once a non-timber benefit becomes known, means of managing or protecting the feature are either iterated in the operational plan or tactical and/or site plans. These requirements are tracked and managed through the respective signatories' EMS as well as by the Compliance and Enforcement branch of the MFLNRO.

Signatory	Number of blocks and roads harvested with non-timber benefits identified in the site plan	Number of blocks and roads harvested with non-timber benefits whereby the associated results and strategies were not achieved	Variance
Canfor	0	0	0
BCTS	3	3	0
TOTAL	3	3	0

Source: Operational/site plans.

Indicator Discussion:

Indicator 38 Safety Policy

Indicator Statement	Target and Variance
Written safety policies in place and full implementation are documented.	Target: 2 Variance: 0

Each signatory has a written safety policy in place which is reviewed by the safety committee a minimum of once every year and revised as necessary and approved by management. If an incident occurs the cause of the incident is determined and recommendations are put forward. These recommendations may result in a change to a specific policy. Annual audits will be conducted and Action Plans developed for any item that requires attention detailing the person responsible for the item and the deadline for completion.

Safety Policy

Signatory	Written Safety Policies in Place and Implementation Documented? (Y/N)
Canfor	Y
BCTS	Y
TOTAL	2

Source: Signatory safety certification records

Indicator Discussion:

Indicator 39 Accidents

Indicator Statement	Target and Variance
Number of lost time accidents in woodlands operations.	Target: 0 Variance: 0

Health and safety of forest workers and members of the public is an important quality of life objective that is essential to SFM. All signatories consider employee and public safety as a primary focus of all forestry related operations. Evidence of this high priority can be seen in various company mission statements and individual EMS policies. This indicator was developed to track and report out on the number of lost time workplace accidents that occur within Canfor's woodlands division and the field operations of BCTS. Operations conducted outside the woodlands division and field operations have been excluded from this indicator; however the signatories currently promote safety in all aspects of forest management operations. Two types of workplace accidents are the most common within the forest industry including lost time accidents (LTA) or incidents where medical aid or treatment was necessary but no loss of work time was experienced by the employee. Through this indicator, only LTA will be tracked and monitored.

Accidents

Signatory	Number of Lost Time Accidents
Canfor	0
BCTS	0
TOTAL	0

Source: Signatory safety records

Indicator Discussion:

Indicator 40 Signage

Indicator Statement	Target and Variance
The percentage of operational activities in place that have the appropriate signage in place during the activity, and removed following the completion.	<u>Target:</u> 100% <u>Variance:</u> -20%

People value being informed of most activities that take place on public lands including those associated with industrial forestry. Signage establishes a standard for safety and otherwise helps inform public about the nature and extent of industrial activity. Conversely, if signage is not kept current, credibility of the signs declines resulting in a potential safety hazard. With this indicator we will monitor our commitment to making information about our activities current and available to those traveling the roads and trails of the Mackenzie DFA.

Signage

Signatory	Number of completed operational projects requiring signage where the signs were posted during the activity and removed following completion	Number of Completed operational Activities requiring signage	Percent
Canfor	40	40	100%
BCTS	61	61	100%
TOTAL	101	101	100%

Source: operational staff communication and final inspections.

Indicator Discussion:

Indicator 41 Forest Area by species composition

Indicator Statement	Target and Variance
Percent composition of forest type (treed conifer, treed broad leaf, treed mixed) >20 years old across DFA.	<u>Target:</u> Maintain baseline ranges and distribution into the future (measured every 5 years) <u>Variance:</u> +/-1%

Tree species composition, stand age, and stand structure are important variables that affect the biological diversity of a forest ecosystem - providing structure and habitat for other organisms. Ensuring a diversity of tree species within their natural range of variation, improves ecosystem resilience and productivity and positively influences forest health. Reporting on this indicator provides high level overview information on area covered by broad forest type, forest succession and management practices that might alter species composition.

This indicator will be reported on a 5 year basis. The different stand types will be run using GIS analysis and VRI data. The baseline data was revised in 2011. Subsequent analysis will be done every 5 years in an effort to eliminate any bias from short term trends on the land-base, and to allow for the periodic updating of data sources. The indicator will be considered to have been met if the area for the 5 year reporting window maintains its area spread within 1 percent of baseline areas.

Analysis Year	Treed Conifer	Treed Broadleaf	Treed Mix
2011	88%	3%	9%
2016			

Source: GIS analysis of VRI data.

Indicator Discussion: Same as last year, this is only analyzed every 5 years, next analysis will be in 2016.

Indicator 42 Proportion of genetically modified trees in reforestation efforts

Indicator Statement	Target and Variance
Regeneration will be consistent with provincial regulations and standards for seed and vegetative material use	<u>Target:</u> 100% conformance with the standards <u>Variance:</u> 0%

One of the primary management objectives for sustainability is to conserve the diversity and abundance of native species and their habitats. Silviculture practices that promote regeneration of native species, either through planting or other natural programs assists in meeting these objectives. The well-being and productivity of future forests is dependent upon the structure and dynamics of their genetic foundation.

Seed used in Crown land reforestation that is consistent with provincial regulations and standards ensure regenerated stands are genetically diverse, adapted, healthy and productive, now and in the future. Suitable seed and vegetative lots must also be of a high quality and available in sufficient quantities to meet the specific stocking and forest health needs of a given planting site.

Regeneration will be consistent with provincial regulation and standards for seed and vegetative material use. Target - 100% conformance with the standards (0 percent variance). The Chief Forester's Standards for seed use allows for up to 5 percent of the seedlings planted in a year to be outside the seed transfer guidelines. In addition, there is an avenue in the standards to apply and receive approval for an Alternative Seed Use Policy. This built in variance and flexibility with the standard is why there is no acceptable variance in the target of the SFMP indicator.

Signatory	Total Number of Seedlings Planted in Compliance with Legislative Requirements	Total Number of Seedlings Planted	Percent	Percent in DFA
Canfor	2140040	2140040	100.0%	100.0%
BCTS	929510	929510	100.0%	
TOTAL	3,069,550	3,069,550		

Source: Internal databases.

Indicator Discussion:

Indicator 43 Dispersed retention levels

Indicator Statement	Target and Variance
Percent of blocks meeting dispersed retention levels as prescribed in the site plan/logging plans	<u>Target:</u> 100% <u>Variance:</u> 0%

Operationally, harvest plans often include retention of dispersed trees such as snags, large live trees, deciduous trees, stub trees and understory trees. Dispersed retention provides stand level complexity and long term recruitment of coarse woody debris. Harvest value and ecological value can be optimized by selecting the variety of tree types (e.g., species, size, live and dead, etc.) that have high ecological value and low economic value, and through the number of trees retained.

Signatory	Total Number of Blocks Meeting Dispersed Retention Levels Defined in Site Plan	Total Number of Blocks Harvested	Percent	Percent in DFA
Canfor	40	40	100.0%	98.7%
BCTS	35	36	97.2%	
TOTAL	75	76		

Source: Internal databases, and Incident Tracking Systems.

Indicator Discussion: BCTS: Site Plan for TSL A88227 called for retention of deciduous trees in SU2, subject to impediments caused by road construction and safety. However, more trees were actually cut than were reasonably needed to address these impediments. As a result, it was determined that the licensee was out of compliance with the license conditions, and corrective and preventative actions were initiated.

Indicator 44 Investment in training and skills development

Indicator Statement	Target and Variance
Training in environmental and safety procedures in compliance with company training plans.	<u>Target:</u> 100% of company employees and contractors will have both environmental and safety training. <u>Variance:</u> -5%

Sustainable forest management provides training and awareness opportunities for forest workers as organizations seek continual improvement in their practices. Investments in training and skill development generally pay dividends to forest organizations by way of a safer and more environmentally conscious work environment. Assessing whether forest contractors have received both safety and environmental training is a direct way of measuring this investment. Additionally, training plans should be in place for employees of the forest organizations who work in the forest. Measuring whether the training occurred in accordance with these plans will confirm an organizations commitment to training and skills development.

Signatory	Total Number of Employees and Contractors Trained in EMS, FMS and Safety	Total Number of Employees and Contractors	Percent	Percent in DFA
Canfor	221	221	100.0%	100.0%
BCTS	38	38	100.0%	
TOTAL	259	259		

Source: Internal tracking systems.

Indicator Discussion:

Indicator 45 Level of direct and indirect employment

Indicator Statement	Target and Variance
Maintain the level of direct and indirect employment.	<u>Target:</u> Canfor 265 direct +53 indirect BCTS 95.5 direct +19 indirect <u>Variance:</u> -5%

Forests represent not only a return on investment (measured, for example, in dollar value, person-days, donations, etc.) for the organization but also a source of income and non-financial benefits for DFA-related workers, local communities and governments.

Organizations that harvest at sustainable harvest levels in relation to the allocated supply levels determined by government authorities continue to provide direct and indirect employment opportunities. The harvest level is set using a rigorous process that considers social, economic and biological criteria.

Targets for this indicator are based on 2010 baseline data of actual direct employment levels for Canfor and BCTS. Direct employment includes all staff and contractors paid directly by Canfor and BCTS. Indirect employment levels are generated using the employment multiplier from the 2000 Timber Supply Review. Indirect employment is difficult to calculate therefore the multiplier is used, and is based on the number of direct jobs. If the signatories are meeting the full-time employment targets it will be assumed that they are also meeting the indirect employment targets.

Signatory	Number of Direct Jobs	Indirect Jobs Met (y/n)
Canfor	311	Y
BCTS	87	N
TOTAL	398	N

Source: Human Resources documents, contractor documentation.

Indicator Discussion: Canfor's target is higher as they have a production facility and BCTS does not. If the amount of direct jobs is met, it is assumed the amount of in-direct jobs will also be met. As a result of the downturn of the local economy interest in direct jobs posted by BCTS has been lower than expected. Several positions have been filled with Mackenzie BCTS recently.

Indicator 46 People reached through educational outreach

Indicator Statement	Target and Variance
The number of stakeholders and members of the public who took part in an educational opportunity.	<u>Target:</u> 50 <u>Variance:</u> -10

The signatories are committed to working with directly affected stakeholders and members of the public on forest management issues and have a well-established history of participation in community meetings, including local planning processes. The sharing of knowledge and contributes to informed, balanced decisions and plans acceptable to the majority of public. When informed and engaged, members of the public can provide local knowledge and support that contributes to socially and environmentally responsible forest management. BCTS and Canfor staff provided educational opportunities both at the request of their employer and of members of educational community in Mackenzie. The Participants have held open houses and participated in local trade fairs. Staff have also provided field tours and in class presentations for the local secondary school.

Signatory	Number of stakeholders who attended educational opportunities
Canfor	0
BCTS	0
Joint	416
TOTAL	416

Source: Attendance records from events held.

Indicator Discussion: Tradefair; approx 400 public attendees; Caribou presentation at Mar 7, 2012 PAG meeting = 7 public attendees; 9 PAG members attended 2 PAG meetings in this reporting period.

Indicator 47 Protection of identified sacred and culturally important sites

Indicator Statement	Target and Variance
Percent of identified Aboriginal forest values, knowledge and uses accommodated in forestry planning processes.	<u>Target:</u> 100% <u>Variance:</u> 0

Efforts have been made to understand which First Nation traditional territories fall within the Plan area and company Defined Forest Areas. Information sharing agreements are made with willing First Nation communities to promote the use and protection of sensitive information.

Forest management plans are shared with Aboriginal communities. Open communication with First Nations that includes a sharing of information enables the participants to understand and incorporate traditional knowledge into forest management options is the means to achieve the objective of the indicator.

The objective will be achieved as the participants become aware of culturally important, sacred and spiritual sites leading to appropriate management of and protection. This will be achieved by specifying measures in operational plans. The proper execution of plans will provide desired results of First Nations culturally important values and resources. Post harvest evaluations and other inspections will assess plan conformance.

Signatory	Number of Aboriginal forest values, knowledge and uses brought forward that have been considered	Number of Aboriginal forest values, knowledge and uses brought forward	Percent	Percent in DFA
Canfor	3	3	100.0%	
BCTS	1	1	100.0%	
TOTAL	4	4		100.0%

Source: Internal tracking databases.

Indicator Discussion:

Indicator 48 Understanding of the nature of Aboriginal Rights and Title

Indicator Statement	Target and Variance
Employees will receive First Nations awareness training.	<u>Target:</u> 100% <u>Variance:</u> 10%

Section 35 of the Constitution Act states "The existing aboriginal and treaty rights of Aboriginal Peoples of Canada are hereby recognized and affirmed". Some examples of the rights that Section 35 has been found to protect include hunting, fishing, trapping, gathering, sacred and spiritual practices, and title. SFM requirements are not in any way intended to define, limit, interpret, or prejudice ongoing or future discussions and negotiations regarding these legal rights and do not stipulate how to deal with Aboriginal title and rights, and treaty rights.

The first step toward respecting Aboriginal title and rights, and treaty rights is compliance with the law. Section 7.3.3 of the CSA Z809-08 Standard reinforces legal requirements for many reasons, including demonstrating that Aboriginal title and rights, and treaty rights have been identified and respected. The reality in demonstrating respect for Aboriginal title and rights, and treaty rights can be challenging in Canada's fluid legislative landscape and therefore it is important to identify these legal requirements as a starting point. It is important for companies to have an understanding of applicable Aboriginal title and rights, and treaty rights, as well as the Aboriginal interests that relate to the DFA.

Both the desire of licensees to comply with laws and open communication with local First Nations requires that company staff members have a good understanding of Aboriginal title and rights and treaty rights.

Signatory	Number of staff who have completed First Nations Awareness training	Total number of staff	Percent	Percent in DFA
Canfor	5	6	83.3%	
BCTS	11	19	57.9%	
TOTAL	16	25		

Source: Employee training databases.

Indicator Discussion: BCTS: This is a new indicator for the updated SFMP Plan. It was anticipated that this indicator would not be met because a formal First Nations Awareness Training module for BCTS had not yet been created. It is anticipated that this training will be available in the summer of 2012 and this indicator will be met in the 2012/13 reporting period. In the meantime, some staff completed the "Working Effectively with Aboriginal Peoples" webinar through the ABCFP which contains content applicable to this indicator. Out of the 8 staff who did not complete the training, 2 have taken within the last 3 years, 2 will be taking the training in April and May of 2012, and 4 staff have moved on from their position with BCTS in Mackenzie therefore were not available to take the training. Canfor: 1 employee has never taken this training, but will this year, all others have taken various versions of this training in the past. Similarly to BCTS, Canfor recently created a new training module on this topic, so all employees will take that in 2012.

Appendix 1

Mackenzie Old Growth and Old Interior Summary Table

Defined Forest Area

Assessment Date - May 2012

Targets based off of the Ministerial Order for Non-spatial Landscape Biodiversity Objectives in the Mackenzie Forest District.

Current reflects all known harvest blocks completed within the DFA as of March 31, 2012 (BCTS, Canfor, Conifex, MK Fibre)

Landscape Unit Group within the DFA	B.E.C Group	B.E.O	CFLB (ha)	Old Growth				Old Interior			
				Target Minimum %	Target Area (ha.)	Current Area (ha.)	Current %	Target Minimum % of Old	Target Area (ha.)	Current Area (ha.)	Current %
a	b	c	d	e	f	g	h	i	j	k	l
Aiken	1	Intermediate	8,654		0	570	7		0	31	NA
Aiken	2	Intermediate	14,355	9	1,292	7,134	50	25	25	1,735	1,735
Aiken	7	Intermediate	4,378	11	482	3,370	77	25	25	775	775
Aiken	8	Intermediate	135		0	111	82		0	20	NA
Akie, Akie River	1	Low	14,828	0	0	6,807	46	10	0	723	NA
Akie, Akie River	2	Low	74,612	9	6,715	49,543	66	10	672	25,893	386
Akie, Akie River	7	Low	28,546	11	3,140	21,337	75	10	314	11,900	379
Akie, Akie River	8	Low	4,327	13	563	1,844	43	10	56	959	170
Bijoux Falls	5	NA	63			13				0	
Blackwater (Includes Muscovite Lakes Park)	1	Low	367	0	0	158	43	10	0	27	NA
Blackwater (Includes Muscovite Lakes Park)	2	Low	22,274	9	2,005	11,692	52	10	200	5,910	295
Blackwater (Includes Muscovite Lakes Park)	3	Low		9				25			
Blackwater (Includes Muscovite Lakes Park)	4	Low	93,806	11	10,319	26,003	28	10	1,032	10,078	98
Blackwater (Includes Muscovite Lakes Park)	5	Low	60,053	0	0	10,538	18	10	0	1,603	NA
Blackwater (Includes Muscovite Lakes Park)	7	Low	337	11	37	74	22	10	782	23	0
Bluff Creek	1	High	98		0	82	83		0	0	NA
Bluff Creek	2	High	11,117		0	5,636	51	25	0	2,756	NA
Bluff Creek	7	High	2,398		0	2,204	92	25	0	806	NA
Bluff Creek	8	High	446		0	86	19		0	6	NA
Braid	1	High	6,860		0	3,399	50		0	693	NA
Braid	2	High	41,601		0	24,635	59	25	0	12,342	NA
Braid	7	High	9,094		0	4,137	45	25	0	1,678	NA
Braid	8	High	2,545		0	478	19		0	202	NA
Buffalohead (Includes Ed Bird Estella Park)	1	Low	17,102	0	0	8,280	48	10	0	1,486	NA
Buffalohead (Includes Ed Bird Estella Park)	2	Low	92,818	9	8,354	50,018	54	10	835	27,875	334
Buffalohead (Includes Ed Bird Estella Park)	5	Low		11				10			

Current reflects all known harvest blocks completed within the DFA as of March 31, 2012 (BCTS, Canfor, Conifex, MK Fibre)

Landscape Unit Group within the DFA	B.E. C Group	B.E.O	CFLB (ha)	Old Growth				Old Interior			
				Target Minimum %	Target Area (ha.)	Current Area (ha.)	Current %	Target Minimum % of Old	Target Area (ha.)	Current Area (ha.)	Current %
Buffalohead (Includes Ed Bird Estella Park)	7	Low	87,125	11	9,584	47,700	55	10	958	34,411	359
Buffalohead (Includes Ed Bird Estella Park)	8	Low	13,803	13	1,794	2,492	18	10	179	605	34
Chase	1	NA	5,825		0	47	1		0	2	NA
Chase	2	NA	19,006		0	19	0		0	NA	NA
Chase	7	NA	8,384		0	47	1		0	1	NA
Chase	8	NA	667		0	2	0		0	NA	NA
Chunamon	1	Low	18,583		0	6,851	37		0	1,238	NA
Chunamon	2	Low	86,824	9	7,814	49,247	57	10	781	21,831	279
Chunamon	4	Low	55,161	11	6,068	20,121	36	10	607	4,087	67
Chunamon	5	Low	9,188		0	3,112	34	10	0	850	NA
Chunamon	7	Low	13,866	11	1,525	7,720	56	10	153	2,232	146
Chunamon	8	Low	2,720		0	475	17		0	55	NA
Clearwater	1	Intermediate	6,742		0	1,608	24		0	158	NA
Clearwater	2	Intermediate	10,731	9	966	1,661	15	25	241	195	20
Clearwater	3	Intermediate	62,981	19	11,966	37,747	60	50	5,983	18,475	154
Clearwater	5	Intermediate	23,091	9	2,078	8,383	36	25	520	2,164	104
Collins - Davis	1	Low	28,214	0	0	9,961	35	10	0	1,269	NA
Collins - Davis	2	Low	56,520	9	5,087	31,805	56	10	509	15,004	295
Collins - Davis	3	Low	40,255	19	7,649	19,551	49	25	1,912	8,366	109
Collins - Davis	4	Low	22,973	11	2,527	6,174	27	10	253	800	32
Collins - Davis	5	Low	33,396	9	3,006	8,776	26	10	301	2,195	73
Collins - Davis	7	Low	11,034	11	1,214	6,992	63	10	121	2,642	218
Collins - Davis	8	Low	3,686	13	479	2,227	60	10	48	717	150
Connaghan Creek, Eklund, Jackfish, South Germansen-Upper Manson	1	High	5,488	0	0	4,129	75	25	0	2,097	NA
Connaghan Creek, Eklund, Jackfish, South Germansen-Upper Manson	2	High	32,835	13	4,269	22,805	69	25	1,067	14,022	329
Connaghan Creek, Eklund, Jackfish, South Germansen-Upper Manson	4	High	5,066	16	811	3,116	62	25	203	1,018	126
Connaghan Creek, Eklund, Jackfish, South Germansen-Upper Manson	5	High	1,290	13	168	638	49	25	42	140	84
Connaghan Creek, Eklund, Jackfish, South Germansen-Upper Manson	7	High	15,822	16	2,532	13,512	85	25	633	8,027	317

Current reflects all known harvest blocks completed within the DFA as of March 31, 2012 (BCTS, Canfor, Conifex, MK Fibre)

Landscape Unit Group within the DFA	B.E. C Group	B.E.O	CFLB (ha)	Old Growth				Old Interior			
				Target Minimum %	Target Area (ha.)	Current Area (ha.)	Current %	Target Minimum % of Old	Target Area (ha.)	Current Area (ha.)	Current %
Connaghan Creek, Eklund, Jackfish, South Germansen-Upper Manson	8	High	1,307	19	248	861	66	25	62	489	197
Discovery, Duckling	1	Intermediate	6,145		0	1,886	31		0	401	NA
Discovery, Duckling	2	Intermediate	21,687	9	1,952	12,265	57	25	488	6,969	357
Discovery, Duckling	7	Intermediate	11,322	11	1,245	8,839	78	25	311	5,534	444
Discovery, Duckling	8	Intermediate	182		0	148	81		0	37	NA
Finlay-Russel	1	NA	17,405		0	253	1		0	31	NA
Finlay-Russel	2	NA	40,004		0	424	1		0	87	NA
Finlay-Russel	7	NA	28,374		0	840	3		0	257	NA
Finlay-Russel	8	NA	2,130		0	4	0		0	NA	NA
Fox	1	High	19,739		0	7,716	39		0	1,206	NA
Fox	2	High	128,485	13	16,703	78,225	61	25	4,176	44,383	266
Fox	7	High	71,451	16	11,432	59,735	84	25	2,858	39,747	348
Fox	8	High	8,093		0	3,469	43		0	1,579	NA
Frog	1	High	14,612		0	9,920	68		0	3,235	NA
Frog	2	High	55,196		0	39,041	71	25	0	23,564	NA
Frog	7	High	11,354		0	7,148	63	25	0	2,679	NA
Frog	8	High	3,363		0	690	21		0	290	NA
Frog-Gataga	1	NA	9,835		0	34	0		0	0	NA
Frog-Gataga	2	NA	73,607		0	472	1		0	148	NA
Frog-Gataga	7	NA	71,421		0	461	1		0	267	NA
Frog-Gataga	8	NA	25,020		0	0	0		0	NA	NA
Gaffney, Manson River	1	Low	861	0	0	582	68	10	0	269	NA
Gaffney, Manson River	2	Low	83,794	9	7,541	40,647	49	10	754	17,835	236
Gaffney, Manson River	4	Low	77,583	11	8,534	30,593	39	10	853	50,714	594
Gaffney, Manson River	5	Low	6,108	9	550	1,363	22	10	55	267	49
Germansen Mountain	1	Low	2,617	0	0	1,393	53	10	0	466	NA
Germansen Mountain	2	Low	7,627	9	686	4,996	66	10	69	2,561	373
Germansen Mountain	7	Low	793	9	71	600	76	10	7	99	139
Gillis, Kwali	1	Intermediate	5,811	0	0	2,595	45	25	0	894	NA
Gillis, Kwali	2	Intermediate	83,716	9	7,534	46,543	56	25	1,884	48,494	644
Gillis, Kwali	4	Intermediate	14,223	11	1,564	4,084	29	25	391	768	49
Gillis, Kwali	7	Intermediate	5,444	11	599	4,723	87	25	150	2,083	348

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Landscape Unit Group within the DFA	B.E. C Group	B.E.O	CFLB (ha)	Old Growth				Old Interior			
				Target Minimum %	Target Area (ha.)	Current Area (ha.)	Current %	Target Minimum % of Old	Target Area (ha.)	Current Area (ha.)	Current %
Gillis, Kwali	8	Intermediate	145	13	19	67	46	25	5	47	251
Ingenika	1	Intermediate	28,453		0	8,540	30		0	1,860	NA
Ingenika	2	Intermediate	37,695	9	3,393	19,414	52	25	848	6,755	199
Ingenika	7	Intermediate	28,936	11	3,183	13,737	47	25	796	4,474	141
Ingenika	8	Intermediate	2,425		0	698	29		0	262	NA
Kennedy	1	High	139		0	44	31		0	NA	NA
Kennedy	3	High	16,873	28	4,725	13,983	83	50	2,362	8,760	185
Kennedy	4	High	287	13	37	146	51	25	9	41	109
Kennedy	5	High	6,150	13	800	1,138	18	25	200	603	75
Kwadacha	1	NA	2,387		0	1	0		0	NA	NA
Kwadacha	2	NA	27,971		0	13	0		0	NA	NA
Kwadacha	7	NA	4,404		0	2	0		0	NA	NA
Kwadacha Addition	1	NA	545		0	38	7		0	0	NA
Kwadacha Addition	2	NA	5,638		0	162	3		0	45	NA
Kwadacha Addition	7	NA	5,407		0	11	0		0	NA	NA
Lake	4	NA	1,648			412				NA	
Lake	5	NA	535			65				NA	
Lake	6	NA	20			7				NA	
Lake	7	NA	81			21				NA	
Lake	8	NA	111			11				NA	
Lower Akie, Lower Pesika	1	High	552		0	371	67	25	0	42	NA
Lower Akie, Lower Pesika	2	High	5,281	13	686	2,946	56	25	172	1,308	191
Lower Akie, Lower Pesika	7	High	12,617	16	2,019	8,365	66	25	505	3,793	188
Lower Akie, Lower Pesika	8	High	4,194	19	797	1,587	38	25	199	682	86
Lower Ospika	1	Intermediate	15,450	0	0	2,647	17	25	0	249	NA
Lower Ospika	2	Intermediate	47,740	9	4,297	13,097	27	25	1,074	3,345	78
Lower Ospika	3	Intermediate	17,503	19	3,325	9,504	54	50	1,663	3,351	101
Lower Ospika	4	Intermediate	21,518	11	2,367	7,983	37	25	592	1,866	79
Lower Ospika	5	Intermediate	6,225	9	560	2,592	42	25	140	1,114	199
McCusker	1	High	12,679		0	4,764	38		0	617	NA
McCusker	2	High	47,770		0	28,255	59	25	0	11,071	NA
McCusker	4	High	3,572		0	1,535	43	25	0	275	NA
Mesilinka	1	Low	22,293		0	9,233	41		0	1,999	NA

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Landscape Unit Group within the DFA	B.E. C Group	B.E.O	CFLB (ha)	Old Growth				Old Interior			
				Target Minimum %	Target Area (ha.)	Current Area (ha.)	Current %	Target Minimum % of Old	Target Area (ha.)	Current Area (ha.)	Current %
Mesilinka	2	Low	57,599	9	5,184	30,298	53	10	518	11,025	213
Mesilinka	7	Low	22,719	11	2,499	16,414	72	10	250	4,838	194
Mesilinka	8	Low	1,197		0	474	40		0	181	NA
Misinchinka, Tudyah B	1	Low	899		0	77	9		0	0	NA
Misinchinka, Tudyah B	2	Low		9				10			
Misinchinka, Tudyah B	3	Low	41,577	19	7,900	31,423	76	25	1,975	20,415	258
Misinchinka, Tudyah B	4	Low	14,337	11	1,577	3,114	22	10	158	229	15
Misinchinka, Tudyah B	5	Low	29,717	9	2,675	14,202	48	10	267	6,556	245
Morfee	1	Intermediate	154	0	0	102	66	50	0	17	NA
Morfee	3	Intermediate	2,703	19	514	1,637	61	50	257	679	132
Morfee	4	Intermediate	5,630	11	619	1,377	24	25	155	119	19
Morfee	5	Intermediate	3,340	9	301	696	21	25	75	148	49
Nabesche	1	Intermediate	19,761	0	0	3,968	20	25	0	639	NA
Nabesche	2	Intermediate	28,035	9	2,523	15,820	56	25	631	6,014	238
Nabesche	3	Intermediate	49,601	19	9,424	23,941	48	50	4,712	10,400	110
Nabesche	4	Intermediate	4,587	11	505	604	13	25	126	21	4
Nabesche	5	Intermediate	13,567	9	1,221	4,755	35	25	305	1,175	96
Nabesche	6	Intermediate	9,755	11	1,073	4,823	49	25	268	1,202	112
Nation	1	Low	0		0	0	9		0	NA	NA
Nation	2	Low	0		0	0	45	10	0	NA	NA
Nation	4	High	11,677	16	1,868	4,392	38	25	467	650	35
Nation	4	Low	0	16	0	0	100	10	0	NA	NA
Nation	5	High	743	16	119	11	2	25	30	NA	NA
Nina Creek	1	High	4,025		0	926	23		0	110	NA
Nina Creek	2	High	11,515	13	1,497	5,767	50	25	374	1,678	112
Nina Creek	7	High	4,680	16	749	3,787	81	25	187	1,852	247
Nina Creek	8	High	262		0	3	1		0	NA	NA
North Firesteel	1	High	18,833		0	8,291	44		0	2,894	NA
North Firesteel	2	High	6,966		0	4,455	64	25	0	1,502	NA
North Ingenika, Swannell	1	High	24,322		0	11,778	48		0	3,543	NA
North Ingenika, Swannell	2	High	47,652	13	6,195	27,253	57	25	1,549	11,575	187
North Ingenika, Swannell	7	High	19,516	16	3,123	14,017	72	25	781	4,792	153
North Ingenika, Swannell	8	High	3,557		0	1,227	34		0	159	NA

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Landscape Unit Group within the DFA	B.E. C Group	B.E.O	CFLB (ha)	Old Growth				Old Interior			
				Target Minimum %	Target Area (ha.)	Current Area (ha.)	Current %	Target Minimum % of Old	Target Area (ha.)	Current Area (ha.)	Current %
Obo River	1	High	28,251		0	20,567	73		0	10,816	NA
Obo River	2	High	44,800	13	5,824	35,335	79	25	1,456	24,300	417
Obo River	7	High	7,878	16	1,261	6,225	79	25	315	3,554	282
Obo River	8	High	8		0	8	100		0	6	NA
Omineca	1	High	0		0	0	12		0	NA	NA
Omineca	1	NA	14,145		0	39	0		0	3	NA
Omineca	2	High	0		0	0	80	25	0	NA	NA
Omineca	2	NA	47,773		0	488	1		0	112	NA
Omineca	5	NA	17		0	6	34		0	0	NA
Omineca	7	NA	44,303		0	795	2		0	118	NA
Omineca	8	NA	7,895		0	235	3		0	44	NA
Osilinka	1	Low	41,664		0	17,972	43		0	4,911	NA
Osilinka	2	Low	130,458	9	11,741	89,485	69	10	1,174	43,839	373
Osilinka	4	Low	1,255	11	138	809	64	10	14	208	151
Osilinka	7	Low	33,800	11	3,718	20,709	61	10	372	14,112	380
Osilinka	8	Low	1,085		0	510	47		0	113	NA
Parsnip (Includes Heather Dina Lake Park)	1	Intermediate	5,198	0	0	1,145	22	50	0	266	NA
Parsnip (Includes Heather Dina Lake Park)	2	Intermediate		9				25			
Parsnip (Includes Heather Dina Lake Park)	3	Intermediate	65,832	19	12,508	47,093	72	50	6,254	29,113	233
Parsnip (Includes Heather Dina Lake Park)	4	Intermediate	20,807	11	2,289	6,902	33	25	572	1,207	53
Parsnip (Includes Heather Dina Lake Park)	5	Intermediate	26,094	9	2,348	11,637	45	25	587	5,902	251
Pelly	1	High	24,594		0	12,979	53		0	4,380	NA
Pelly	2	High	53,983	13	7,018	29,316	54	25	1,754	12,903	184
Pelly	7	High	16,166	16	2,586	10,510	65	25	647	5,145	199
Pelly	8	High	552		0	227	41		0	106	NA
Pesika	1	Intermediate	8,773	9	790	3,900	44	25	197	271	34
Pesika	2	Intermediate	33,308	9	2,998	14,995	45	25	749	6,613	221
Pesika	7	Intermediate	7,213	11	793	4,244	59	25	198	1,415	178
Pesika	8	Intermediate	1,009	13	131	348	35	25	33	64	49
Philip, Philip Lake, Tudyah A	2	Low	66,482	9	5,983	24,595	37	10	598	8,113	136
Philip, Philip Lake, Tudyah A	4	Low	121,747	11	13,392	35,328	29	10	1,339	42,426	317
Philip, Philip Lake, Tudyah A	5	Low	5,165	9	465	187	4	10	46	4	1
Pine Pass	1	Intermediate	0		0	0	24		0	NA	NA

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Landscape Unit Group within the DFA	B.E. C Group	B.E.O	CFLB (ha)	Old Growth				Old Interior			
				Target Minimum %	Target Area (ha.)	Current Area (ha.)	Current %	Target Minimum % of Old	Target Area (ha.)	Current Area (ha.)	Current %
Pine Pass	3	Intermediate	0		0	0	52	50	0	NA	NA
Pine Pass	3	NA	5,845		0	1	0		0	NA	NA
Pine Pass	5	Intermediate	0		0	0	14	25	0	NA	NA
Pine Pass	5	NA	2,316		0	60	3		0	0	NA
Schooler	1	Intermediate	6,821	0	0	2,356	35	25	0	299	NA
Schooler	2	Intermediate	39,250	9	3,532	16,217	41	25	883	7,319	207
Schooler	6	Intermediate	13,696	11	1,507	4,216	31	25	377	944	63
Schooler	8	Intermediate	1,935	13	251	21	1	25	63	NA	NA
Selwyn	1	High	2,174	0	0	1,494	69	50	0	488	NA
Selwyn	2	High	134	13	17	4	3	25	4	NA	NA
Selwyn	3	High	21,078	28	5,902	13,810	66	50	2,951	6,972	118
Selwyn	4	High	1,066	16	171	255	24	25	43	32	19
Selwyn	5	High	19,996	13	2,599	4,239	21	25	650	883	34
Selwyn	6	High	1,598	16	256	649	41	25	64	64	25
Selwyn	8	High	3,165	19	601	145	5	25	150	5	1
South Firesteel	1	High	29,781		0	15,557	52		0	5,010	NA
South Firesteel	2	High	32,966		0	23,124	70	25	0	11,197	NA
Tatlatui	1	NA	14,254		0	0	0		0	NA	NA
Tatlatui	2	NA	20,756		0	0	0		0	NA	NA
Thutade	1	High	153,601		0	85,540	56		0	40,890	NA
Thutade	2	High	128,762	13	16,739	89,957	70	25	4,185	45,290	271
Thutade	7	High	5,042	16	807	4,636	92	25	202	1,032	128
Thutade	8	High	28		0	22	77		0	0	NA
Tudyah Lake	4	NA	49			24				0	
Tutizza	1	High	12,901		0	2,789	22		0	335	NA
Tutizza	2	High	21,861	13	2,842	14,173	65	25	710	5,343	188
Tutizza	7	High	979	13	127	860	88	25	32	136	107
Tutizza	8	High	15		0	8	55		0	2	NA
Twenty Mile	1	Intermediate	3,658	0	0	1,960	54	25	0	563	NA
Twenty Mile	2	Intermediate	13,359	9	1,202	9,425	71	25	301	4,831	402
Twenty Mile	4	Intermediate	0		0	0	100	25	0	NA	NA
Twenty Mile	7	Intermediate	3,372	11	371	3,074	91	25	93	1,724	465
Twenty Mile	8	Intermediate	54	13	7	42	78	25	2	9	124

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Landscape Unit Group within the DFA	B.E. C Group	B.E.O	CFLB (ha)	Old Growth				Old Interior			
				Target Minimum %	Target Area (ha.)	Current Area (ha.)	Current %	Target Minimum % of Old	Target Area (ha.)	Current Area (ha.)	Current %
Upper Akie River	1	High	15,629		0	5,138	33		0	270	NA
Upper Akie River	2	High	55,544		0	33,798	61	25	0	14,567	NA
Upper Akie River	7	High	6,002		0	2,784	46	25	0	1,318	NA
Upper Akie River	8	High	71		0	42	59		0	10	NA
Upper Gataga	1	High	47		0	37	77		0	1	NA
Upper Gataga	2	High	6,275		0	6,027	96	25	0	2,061	NA
Upper Gataga	7	High	2,254		0	2,188	97	25	0	1,112	NA
Upper Ospika	1	High	7,121	0	0	3,052	43	50	0	411	NA
Upper Ospika	2	High	22,520	13	2,928	17,595	78	25	732	10,112	345
Upper Ospika	3	High	8	13	1	5	60	50	1	0	22
Upper Ospika	4	High	2,801	16	448	2,471	88	25	112	1,445	322
Upper Pelly	1	High	32,174		0	11,402	35		0	3,838	NA
Upper Pelly	2	High	33,266		0	17,399	52	25	0	7,488	NA
Upper Pelly	7	High	5,112		0	4,200	82	25	0	2,508	NA
Upper Pelly	8	High	98		0	23	23		0	5	NA
Wicked River	1	High	9,811		0	2,024	21		0	237	NA
Wicked River	3	High	33,207		0	21,230	64	50	0	9,208	NA
Wicked River	5	High	4,971		0	3,725	75	25	0	1,182	NA

May 2012 Patch size Analysis																						
Current State of depletions as of March 31, 2012																						
Future state projected to 2017 with all planned blocks from BCTS, Canfor, Conifex and MK Fibre																						
Enhanced Management Strategy Resource Management Zones																						
Landscape Unit Group within the DFA	NDT	Current Total Area of patches (ha)	Future Total Area of patches (ha)	NDT 1, 2, and 3 =<40				NDT 1 and 2 = 40-80, NDT 3 = 40-250				NDT 1 and 2 = 80-250, NDT 3 = 250-5000				over maximum						
				Target Range %	Current Area (ha)	Current %	Future Area (ha)	Future %	Target Range %	Current Area (ha)	Current %	Future Area (ha)	Future %	Target Range %	Current Area (ha)	Current %	Future Area (ha)	Future %	Current Area (ha)	Current %	Future Area (ha)	Future %
Akie, Akie River	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0	0%
	2	455.0	430.0	30-40	0.0	0%	0.0	0%	30-40	94.9	21%	94.9	22%	20-40	274.9	60%	335.0	78%	85.2	19%	0	0%
	3	2210.3	1217.3	10-20	73.1	3%	76.8	6%	10-20	1037.6	47%	899.1	74%	60-80	1099.6	50%	241.5	20%	0.0	0%	0	0%
Blackwater	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0	0%
	2	6297.5	9699.9	30-40	158.6	3%	359.2	4%	30-40	1270.9	20%	1939.1	20%	20-40	1661.0	26%	1298.2	13%	3206.9	51%	6103.3	63%
	3	11516.3	11687.7	10-20	215.3	2%	204.5	2%	10-20	2504.5	22%	2477.1	21%	60-80	8802.4	76%	9006.1	77%	0.0	0%	0	0%
Buffalohead*	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0	0%
	2	5100.4	1866.0	30-40	56.1	1%	35.9	2%	30-40	545.6	11%	422.4	23%	20-40	1286.7	25%	726.7	39%	3212.0	63%	680.9	36%
	3	13511.0	4988.1	10-20	247.3	2%	197.3	4%	10-20	2835.9	21%	1797.5	36%	60-80	3548.0	26%	2993.4	60%	6880.1	51%	0	0%
Collins-Davis	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0	0%
	2	3751.0	3195.9	30-40	97.0	3%	103.2	3%	30-40	468.6	12%	468.1	15%	20-40	1400.4	37%	813.1	25%	1784.9	48%	1811.5	57%
	3	3072.8	2260.6	10-20	115.1	4%	68.6	3%	10-20	1548.3	50%	1194.5	53%	60-80	1409.3	46%	997.5	44%	0.0	0%	0	0%
Chunamon	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0	0%
	2	5163.6	1794.4	30-40	37.9	1%	37.7	2%	30-40	562.7	11%	410.5	23%	20-40	1082.2	21%	602.7	34%	3480.9	67%	743.5	41%
	3	10227.5	11813.7	10-20	367.0	4%	296.6	3%	10-20	2398.0	23%	1996.8	17%	60-80	7462.4	73%	9520.2	81%	0.0	0%	0	0%
Gaffney-Manson River	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0	0%
	2	7313.0	7461.9	30-40	216.9	3%	292.3	4%	30-40	1827.1	25%	2693.3	36%	20-40	3338.9	46%	1960.5	26%	1930.1	26%	2515.8	34%
	3	9834.8	13706.4	10-20	209.8	2%	159.3	1%	10-20	2945.4	30%	2076.7	15%	60-80	6679.6	68%	11470.4	84%	0.0	0%	0	0%
Germansen Mtn.	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0	0%
	2	66.2	66.2	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	66.2	100%	66.2	100%
	3	3.0	3.0	10-20	0.0	0%	0.0	0%	10-20	0.0	0%	0.0	0%	60-80	3.0	100%	3.0	100%	0.0	0%	0	0%
Morfee	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0	0%
	2	483.4	425.3	30-40	35.6	7%	49.5	12%	30-40	153.4	32%	60.7	14%	20-40	162.1	34%	182.9	43%	132.2	27%	132.2	31%
	3	1319.8	1187.4	10-20	31.5	2%	28.2	2%	10-20	351.3	27%	361.9	30%	60-80	937.1	71%	797.2	67%	0.0	0%	0	0%
Osilinka	1	0	0.0	30-40	0	0%	0	0%	30-40	0	0%	0	0%	20-40	0.0	0%	0	0%	0.0	0%	0	0%
	2	8669.2	5669.9	30-40	521.5	6%	495.7	9%	30-40	2098	24%	2505.8	44%	20-40	2192.6	25%	1404.1	25%	3857.2	44%	1264.3	22%
	3	3745.2	2970.1	10-20	111.7	3%	72.9	2%	10-20	1502.3	40%	1088.1	37%	60-80	2131.2	57%	1809.2	61%	0.0	0%	0	0%
Philip, Philip Lake, Tudyah A **	1	0	0.0	30-40	0	0%	0	0%	30-40	0	0%	0	0%	20-40	0.0	0%	0	0%	0.0	0%	0	0%
	2	7889.6	7988.6	30-40	256	3%	253.7	3%	30-40	1455.1	18%	1193.4	15%	20-40	2719.2	34%	1698.6	21%	3459.2	44%	4842.8	61%
	3	17080.1	19578.0	10-20	377.5	2%	443.3	2%	10-20	3714.5	22%	3810.6	19%	60-80	12988.1	76%	15324.1	78%	0.0	0%	0	0%
* Portion of the LU / LU Group as per licensee request																						
** All of the LU / LU Group as per licensee request																						

May 2012 Patch size Analysis																							
Current State of depletions as of March 31, 2012																							
Future state projected to 2017 with all planned blocks from BCTS, Canfor, Conifex and MK Fibre																							
General and Special Management Strategy Resource Management Zones																							
Landscape Unit Group within the DFA	NDT	Current Total Area of patches (ha)	Future Total Area of patches (ha)	NDT 1, 2, and 3 =<40					NDT 1 and 2 = 40-80, NDT 3 = 40-250					NDT 1 and 2 = 80-250, NDT 3 = 250-1000					over maximum				
				Target Range %	Current Area (ha)	Current %	Future Area (ha)	Future %	Target Range %	Current Area (ha)	Current %	Future Area (ha)	Future %	Target Range %	Current Area (ha)	Current %	Future Area (ha)	Future %	Current Area (ha)	Current %	Future Area (ha)	Future %	
Clearwater	1	1023.5	3792.7	30-40	19.9	2%	129.7	3%	30-40	239.5	23%	378.8	10%	20-40	706.5	69%	891.9	24%	57.5	6%	2392.3	63%	
	2	1074.4	3732.4	30-40	114.9	11%	112.9	3%	30-40	486.5	45%	237.2	6%	20-40	307.3	29%	1055.0	28%	165.8	15%	2327.3	62%	
	3	0.0	0.0	10-20	0.0	0%	0.0	0%	10-20	0.0	0%	0.0	0%	60-80	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
Discovery-Duckling	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	397.1	375.1	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	30.0	8%	20-40	177.7	45%	123.8	33%	219.4	55%	221.3	59%	
	3	1198.2	1308.3	10-20	12.8	1%	12.8	1%	10-20	121.3	10%	83.2	6%	60-80	1064.0	89%	1212.2	93%	0.0	0%	0.0	0%	
Fox	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	1547.3	224.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	47.1	3%	0.0	0%	1500.1	97%	224.0	100%	
	3	691.1	175.0	10-20	2.0	0%	2.0	1%	10-20	52.3	8%	0.0	0%	60-80	0.0	0%	0.0	0%	636.8	92%	173.0	99%	
Ingenika	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	413.1	197.8	30-40	30.5	7%	5.5	3%	30-40	67.8	16%	18.6	9%	20-40	314.7	76%	173.7	88%	0.0	0%	0.0	0%	
	3	1537.6	305.7	10-20	62.1	4%	49.0	16%	10-20	843.4	55%	256.7	84%	60-80	632.2	41%	0.0	0%	0.0	0%	0.0	0%	
Lower Akie - Lower Peskia	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	7.1	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	7.1	100%	0.0	0%	0.0	0%	0.0	0%	
	3	1295.7	570.2	10-20	15.5	1%	34.0	6%	10-20	195.7	15%	214.3	38%	60-80	1053.6	81%	321.9	56%	30.9	2%	0.0	0%	
Lower Ospika	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	877.1	385.4	30-40	0.0	0%	0.0	0%	30-40	45.4	5%	86.2	22%	20-40	40.7	5%	210.6	55%	791.0	90%	88.6	23%	
	3	2036.2	1242.9	10-20	90.2	4%	46.2	4%	10-20	492.9	24%	198.4	16%	60-80	601.1	30%	998.2	80%	851.9	42%	0.0	0%	
Nabesche	1	264.3	264.3	30-40	56.2	21%	56.4	21%	30-40	72.8	28%	72.8	28%	20-40	135.1	51%	135.1	51%	0.0	0%	0.0	0%	
	2	1144.3	748.7	30-40	142.9	12%	163.6	22%	30-40	309.5	27%	198.1	26%	20-40	594.9	52%	290.2	39%	96.8	8%	96.9	13%	
	3	850.2	464.3	10-20	38.0	4%	14.4	3%	10-20	410.0	48%	47.8	10%	60-80	57.4	7%	402.0	87%	344.7	41%	0.0	0%	
Nation	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	80.9	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	80.9	100%	0.0	0%	0.0	0%	0.0	0%	
	3	458.6	986.5	10-20	1.6	0%	9.5	1%	10-20	211.4	46%	336.9	34%	60-80	85.7	19%	640.1	65%	159.8	35%	0.0	0%	
Nina Creek	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	73.0	73.0	30-40	32.2	44%	32.2	44%	30-40	14.3	20%	14.3	20%	20-40	26.4	36%	26.4	36%	0.0	0%	0.0	0%	
	3	90.5	90.5	10-20	0.0	0%	0.0	0%	10-20	90.5	100%	90.5	100%	60-80	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
North Ingenika - Swannell*	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	163.3	113.6	30-40	45.9	28%	45.9	40%	30-40	67.7	41%	67.7	60%	20-40	49.6	30%	0.0	0%	0.0	0%	0.0	0%	
	3	90.0	1.5	10-20	0.0	0%	0.0	0%	10-20	90.0	100%	1.5	100%	60-80	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
Obo River no blocks	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	3	0.0	0.0	10-20	0.0	0%	0.0	0%	10-20	0.0	0%	0.0	0%	60-80	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
Parsnip	1	274.2	407.3	30-40	48.4	18%	57.6	14%	30-40	121.1	44%	261.3	64%	20-40	104.7	38%	88.4	22%	0.0	0%	0.0	0%	
	2	1423.9	1807.8	30-40	44.5	3%	138.6	8%	30-40	635.1	45%	758.2	42%	20-40	617.4	43%	673.3	37%	126.8	9%	237.6	13%	
	3	4135.4	4800.8	10-20	23.2	1%	73.6	2%	10-20	964.5	23%	1102.4	23%	60-80	1881.4	45%	3624.7	76%	1266.3	31%	0.0	0%	
Pelly	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	12.9	12.9	30-40	2.6	20%	2.6	20%	30-40	10.2	79%	10.2	79%	20-40	0.0	0%	0.0	0%	0.0	1%	0.0	1%	
	3	0.0	0.0	10-20	0.0	0%	0.0	0%	10-20	0.0	0%	0.0	0%	60-80	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
Pesika	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	72.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	72.0	100%	0.0	0%	0.0	0%	0.0	0%	
	3	26.9	9.3	10-20	9.3	35%	9.3	100%	10-20	17.6	65%	0.0	0%	60-80	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
Schooler	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	950.0	404.2	30-40	38.8	4%	11.9	3%	30-40	112.0	12%	76.0	19%	20-40	367.3	39%	21.8	5%	431.9	45%	294.5	73%	
	3	321.7	273.8	10-20	15.2	5%	8.5	3%	10-20	17.4	5%	17.4	6%	60-80	41.1	13%	248.0	91%	248.0	77%	0.0	0%	
Selwyn	1	0.0	114.4	30-40	0.0	0%	21.9	19%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	92.5	81%	0.0	0%	0.0	0%	
	2	547.6	1282.4	30-40	64.0	12%	68.4	5%	30-40	35.6	7%	126.3	10%	20-40	121.1	22%	308.5	24%	326.9	60%	779.3	61%	
	3	353.6	353.6	10-20	0.0	0%	0.0	0%	10-20	69.4	20%	69.3	20%	60-80	0.0	0%	284.2	80%	284.2	80%	0.0	0%	
Thutade *	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	410.2	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	410.2	100%	0.0	0%	
	3	0.0	0.0	10-20	0.0	0%	0.0	0%	10-20	0.0	0%	0.0	0%	60-80	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
Upper Ospika no blocks	1	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	2	0.0	0.0	30-40	0.0	0%	0.0	0%	30-40	0.0	0%	0.0	0%	20-40	0.0	0%	0.0	0%	0.0	0%	0.0	0%	
	3	0.0	0.0	10-20	0.0	0%	0.0	0%	10-20	0.0	0%	0.0	0%	60-80	0.0	0%	0.0	0%	0.0	0%	0.0	0%	

* Portion of the LU / LU Group as per licensee request

** All of the LU / LU Group as per licensee request

LU / LU Groups not requiring analysis

LU Group	RMZ Category	Caribou
Bluff Creek	Special - Wildland	n
Braid	Special - Wildland	n
Chase	Protected	Yes - Caribou
Finlay-Russel	Protected	n
Frog	Special - Wildland	n
Frog - Gataga	Protected	n
Kwadacha	Protected	n
Kwadacha Addition	Protected	n
Lake	N/A	n
McCusker	Special - Wildland	n
Morphee	Settlement	n
North Firesteel	Special - Wildland	Yes - Caribou
Omineca	Protected	n
Pine Pass	Protected	n
Selwyn	Special - Wildland	n
South Firesteel	Special - Wildland	n
Tatlatui	Protected	n
Upper Akie River	Special - Wildland	n
Upper Gataga	Special - Wildland	n
Upper Pelly	Special - Wildland	n
Wicked River	Special - Wildland	n



FMG Peak Flow
Current and Future State

Future State is estimated for **2014 (2yr)**

Basin Type: **Small**

The inventory is projected to the current year using an estimate of 0.30m growth per year.
 Highways are buffered 10m, FSRs and mainlines 7.5m and block roads 5m All 0% recovery
 Pipelines 12m buffer, wellsites 30m buffer. All 0% recovery
 Clearings from VRI 0% recovery
 Partially harvested blocks are estimated with 70% recovery for current state.
 Woodlots defaulting to 50% recovery due to no harvest attributes available.

Dead Pine: Fort St. James and Vanderhoof use the following recovery values:

PL 30% - 70% 80% recovery
 PL >70% 50% recovery

Sensitivity Levels

1	50
2	40
3	35
4	30
5	25

Watershed	Gazette Name	Resp.	Min Elev	Max Elev	Elev Chng	Watershed Area (Ha)	Sensitiv.	Sensitiv. Target	PFI Target	CURRENT STATE					FUTURE STATE				
										Harv Area (ha)	ECA above	ECA below	ECA Area (ha)	PFI	Harv Area (ha)	ECA above	ECA below	ECA Area	PFI
Mackenzie Forest District																			
Vintage: 06-Jul-2012																			
AKIE RIVER		BCTS	700	2,520	1,820	65,608				1,359.8	277.4	742.5	1,019.9	1.6	1,386.1	314.7	1,130.3	1,445.0	2.2
AKIE00002		BCTS	920	2,180	1,260	1,974				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AKIE00003		BCTS	920	2,260	1,340	6,671				99.7	1.4	24.0	25.4	0.4	99.7	1.4	24.0	25.4	0.4
AKIE00004		BCTS	920	2,340	1,420	10,123				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AKIE00005		BCTS	760	2,260	1,500	7,627				20.3	0.0	10.2	10.2	0.1	20.3	0.0	10.2	10.2	0.1
AKIE00006		BCTS	800	2,180	1,380	3,219				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AKIEKA CREEK		BCTS	860	2,240	1,380	4,091				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ALEY CREEK		CFP	725	2,460	1,735	14,962				282.6	0.0	201.9	201.9	1.3	286.8	0.0	184.3	184.3	1.2
ATUNATCHE CREEK		BCTS	685	2,085	1,400	59,502				3,772.9	96.7	2,048.6	2,145.4	3.6	3,772.9	221.9	2,030.0	2,251.9	3.8
BALDEN CREEK		CFP	770	2,370	1,600	17,361				0.1	0.0	0.1	0.1	0.0	26.0	0.0	26.0	26.0	0.1
BEVEL CREEK		CFP	675	1,895	1,220	8,750				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLACKWATER CREEK		CFP	670	1,855	1,185	49,380				14,494.6	5,189.3	3,393.5	8,582.8	17.4	14,919.6	6,933.7	3,557.6	10,491.4	21.2
BLANCHARD CREEK		BCTS	700	1,995	1,295	6,691				183.6	0.0	117.8	117.8	1.8	191.4	0.0	120.8	120.8	1.8
BRUIN CREEK		CFP	680	2,265	1,585	13,931				1,320.6	115.0	935.1	1,050.2	7.5	1,322.8	114.9	854.1	969.1	7.0
CARPWSD000003		CFP	670	980	310	4,350				458.5	106.0	218.8	324.9	7.5	492.6	186.3	217.9	404.2	9.3
CARPWSD000006		BCTS	675	1,280	605	3,869				1,163.5	453.1	240.7	693.8	17.9	1,163.5	453.1	240.7	693.8	17.9
CHICHOUYENILY CREEK		BCTS	675	1,700	1,025	7,415				359.0	19.5	300.3	319.8	4.3	359.0	19.5	320.9	340.4	4.6
CHOWIKA CREEK		CFP	680	2,410	1,730	47,458				132.4	0.0	55.3	55.3	0.1	144.3	0.0	67.2	67.2	0.1
CIARELLI CREEK		CFP	840	1,840	1,000	11,675				1,530.7	513.5	476.5	990.0	8.5	1,563.5	458.9	471.4	930.3	8.0
CLEARWATER RIVER		BCTS	680	2,320	1,640	63,101				2,761.4	296.9	1,455.4	1,752.3	2.8	2,761.7	259.3	1,256.5	1,515.8	2.4
COLBOURNE CREEK		BCTS	695	1,795	1,100	28,904				1,846.4	97.1	1,482.4	1,579.6	5.5	1,846.4	362.2	2,645.2	3,007.5	10.4
COLIN CREEK		BCTS	675	2,300	1,625	4,558				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COLLINS CREEK		CFP	680	2,280	1,600	13,764				1,808.3	422.7	808.2	1,230.9	8.9	1,820.3	411.8	749.4	1,161.2	8.4
DASTAIGA CREEK		BCTS	670	1,590	920	8,121				1,460.9	966.8	462.2	1,429.0	17.6	1,462.1	1,137.2	550.4	1,687.6	20.8
DAVIS RIVER		CFP	680	2,275	1,595	47,502				2,065.5	347.5	723.0	1,070.6	2.3	2,066.3	347.5	705.4	1,052.9	2.2

Watershed	Gazette Name	Resp.	Min Elev	Max Elev	Elev Chng	Watershed Area (Ha)	Sensitiv.	Sensitiv. Target	PFI Target	CURRENT STATE					FUTURE STATE				
										Harv Area (ha)	ECA above	ECA below	ECA Area (ha)	PFI	Harv Area (ha)	ECA above	ECA below	ECA Area	PFI
DEL CREEK		BCTS	704	2,298	1,594	26,439				1,187.6	33.2	818.8	852.1	3.2	1,205.4	30.8	765.1	795.9	3.0
DES CREEK		CFP	730	1,075	345	3,332				495.5	319.3	192.1	511.4	15.3	495.5	298.3	186.1	484.4	14.5
DUCETTE CREEK		BCTS	680	1,945	1,265	18,692				2.5	0.0	2.5	2.5	0.0	2.5	0.0	2.5	2.5	0.0
DUNNE CREEK		CFP	860	1,880	1,020	9,433				644.6	48.7	381.6	430.3	4.6	653.7	45.2	362.5	407.6	4.3
EKLUND CREEK		CFP	675	2,080	1,405	24,587				3,553.6	133.2	1,487.2	1,620.4	6.6	3,926.1	127.3	1,705.7	1,833.0	7.5
FINAWSD000020		CFP	680	2,000	1,320	3,549				392.2	35.0	157.4	192.4	5.4	392.2	35.0	156.5	191.5	5.4
FINAWSD000035		CFP	680	2,315	1,635	5,922				169.4	2.6	33.6	36.2	0.6	169.4	2.6	33.6	36.2	0.6
FINAWSD000036		CFP	680	1,860	1,180	3,710				98.0	10.4	2.9	13.3	0.4	98.0	10.4	2.9	13.3	0.4
FINAWSD000039		CFP	675	2,000	1,325	3,437				6.9	0.0	14.5	14.5	0.4	6.9	0.0	14.5	14.5	0.4
FINAWSD000040		CFP	675	2,090	1,415	5,092				696.8	1.0	211.2	212.1	4.2	696.8	0.5	163.1	163.6	3.2
FINAWSD000043		CFP	670	1,850	1,180	7,689				1,612.5	1,365.9	157.0	1,522.8	19.8	1,615.8	1,341.8	146.2	1,488.0	19.4
FINAWSD000044		CFP	675	915	240	3,682				169.8	103.8	0.0	103.8	2.8	169.8	103.8	0.0	103.8	2.8
FINAWSD000046		CFP	670	885	215	4,960				1,805.6	1,386.2	107.9	1,494.1	30.1	2,168.5	2,125.0	262.1	2,387.1	48.1
FINAWSD000050		CFP	680	1,420	740	3,401				1,485.4	641.4	211.3	852.7	25.1	1,558.0	687.6	282.9	970.5	28.5
FINLWSD000021		BCTS	720	2,305	1,585	18,351				0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.8	54.8	0.3
FINLWSD000028		BCTS	965	2,450	1,485	14,583				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FINLWSD000035		BCTS	900	2,340	1,440	12,088				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FINLWSD000066		CFP	725	1,510	785	5,203				305.9	121.7	175.8	297.5	5.7	313.1	130.3	148.3	278.6	5.4
FINLWSD000073		BCTS	720	1,895	1,175	7,460				648.5	27.5	475.4	502.9	6.7	652.8	23.0	433.8	456.8	6.1
FRIES CREEK		CFP	670	2,115	1,445	7,544				2,060.2	83.9	658.5	742.4	9.8	2,065.5	51.4	547.5	598.9	7.9
GAFFNEY CREEK		CFP	825	1,830	1,005	49,216				12,070.7	5,835.8	4,909.0	10,744.7	21.8	13,270.5	6,061.7	6,249.7	12,311.4	25.0
GAGNON CREEK		BCTS	670	1,735	1,065	11,343				2,463.1	246.4	997.9	1,244.2	11.0	2,463.1	239.1	1,059.3	1,298.4	11.4
GAUVREAU CREEK		CFP	675	2,345	1,670	20,292				167.5	0.0	119.5	119.5	0.6	168.1	0.0	120.1	120.1	0.6
GERMANSEN RIVER		CFP	760	1,960	1,200	22,918				746.7	440.3	326.8	767.1	3.3	758.9	361.8	556.2	918.0	4.0
GILLIS CREEK		BCTS	995	1,940	945	62,095				8,394.4	3,185.7	4,609.6	7,795.2	12.6	8,437.0	4,961.0	4,839.7	9,800.7	15.8
GOODASANY CREEK		CFP	840	1,900	1,060	4,147				60.0	0.0	52.1	52.1	1.3	67.2	7.2	102.4	109.5	2.6
GRANITE CREEK		CFP	880	2,040	1,160	4,099				273.6	0.0	192.7	192.7	4.7	274.3	0.0	193.3	193.3	4.7
HOLDER CREEK		CFP	675	1,205	530	8,198				3,042.7	1,526.5	1,371.1	2,897.7	35.3	3,187.8	1,640.2	1,431.5	3,071.7	37.5
IVOR CREEK		CFP	675	2,165	1,490	4,527				93.0	0.0	60.3	60.3	1.3	93.0	46.9	323.9	370.8	8.2
JACKFISH CREEK		CFP	745	2,080	1,335	16,886				683.8	66.4	270.0	336.4	2.0	696.9	55.2	281.5	336.7	2.0
KIMTA CREEK		BCTS	670	1,900	1,230	13,053				1,393.2	200.1	251.1	451.1	3.5	1,393.2	195.1	240.4	435.6	3.3
LAFFERTY CREEK		CFP	675	2,145	1,470	25,906				1,986.1	933.7	615.7	1,549.4	6.0	2,021.7	895.8	550.8	1,446.6	5.6
LAMONTI CREEK		BCTS	670	1,855	1,185	4,285				367.1	42.7	134.1	176.8	4.1	367.1	42.7	133.1	175.8	4.1
LIGNITE CREEK		BCTS	675	1,610	935	16,549				1,957.0	1,193.8	814.1	2,007.9	12.1	1,965.6	1,258.3	805.4	2,063.7	12.5
LOST CABIN CREEK		CFP	675	1,875	1,200	8,283				237.8	19.5	200.6	220.0	2.7	237.8	19.5	200.6	220.0	2.7
MANSON RIVER		CFP	680	1,900	1,220	62,641				10,938.0	2,556.0	3,669.0	6,225.1	9.9	11,310.6	2,515.4	3,988.2	6,503.6	10.4
MCDOUGALL RIVER		CFP	765	1,605	840	40,403				6,474.5	4,706.2	1,729.2	6,435.4	15.9	6,555.5	4,496.0	1,784.9	6,280.8	15.5
MISCHINSINLIKA CREEK		BCTS	670	1,770	1,100	23,373				2,860.2	58.8	1,734.8	1,793.5	7.7	2,860.2	51.8	1,795.3	1,847.0	7.9
MUNRO CREEK		CFP	800	1,840	1,040	8,833				1,939.5	523.5	544.0	1,067.5	12.1	1,951.4	658.0	500.6	1,158.6	13.1

Watershed	Gazette Name	Resp.	Min Elev	Max Elev	Elev Chng	Watershed Area (Ha)	Sensitiv.	Sensitiv. Target	PFI Target	CURRENT STATE					FUTURE STATE				
										Harv Area (ha)	ECA above	ECA below	ECA Area (ha)	PFI	Harv Area (ha)	ECA above	ECA below	ECA Area	PFI
MUNRO LAKE		BCTS	815	1,545	730	19,355				4,242.4	2,907.8	881.0	3,788.8	19.6	4,331.8	3,772.5	1,349.1	5,121.6	26.5
NABESCHE RIVER		CFP	850	2,440	1,590	64,695				5,230.2	826.0	2,448.3	3,274.3	5.1	5,230.2	616.5	2,023.7	2,640.2	4.1
NATION RIVER		BCTS	680	1,640	960	68,739				14,581.7	9,044.3	3,318.9	12,363.3	18.0	14,816.2	12,398.6	3,582.6	15,981.3	23.2
NATRWSD000006		CFP	680	1,065	385	6,191				4,051.4	845.0	442.1	1,287.1	20.8	4,371.6	1,224.1	446.4	1,670.6	27.0
NATRWSD000018		BCTS	725	1,780	1,055	12,267				1,866.1	810.7	774.4	1,585.0	12.9	1,866.7	692.6	727.5	1,420.0	11.6
OLSEN CREEK		CFP	1,025	2,000	975	4,432				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OSPIKA RIVER		CFP	680	2,400	1,720	108,942				3,158.1	647.3	1,855.3	2,502.6	2.3	3,226.8	647.3	1,708.6	2,355.9	2.2
OSPKWSD000018		CFP	800	2,260	1,460	12,541				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OSPKWSD000023		CFP	765	2,420	1,655	9,970				1.7	0.0	1.7	1.7	0.0	15.5	0.0	15.5	15.5	0.2
OSPKWSD000027		CFP	740	2,430	1,690	6,154				30.4	0.0	30.4	30.4	0.5	33.3	0.0	26.4	26.4	0.4
OSPKWSD000030		CFP	715	2,230	1,515	4,020				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OSPKWSD000032		CFP	710	2,070	1,360	6,334				920.1	133.8	519.6	653.4	10.3	922.2	133.8	515.2	648.9	10.2
OSPKWSD000034		CFP	690	2,260	1,570	8,321				422.5	0.0	337.1	337.1	4.1	422.5	24.2	281.9	306.1	3.7
PARAWSD000024		CFP	670	980	310	2,382				1,099.5	178.6	136.1	314.7	13.2	1,220.0	334.3	159.1	493.4	20.7
PARAWSD000036		BCTS	670	1,535	865	6,228				1,972.2	311.3	407.2	718.5	11.5	1,972.2	187.8	228.3	416.1	6.7
PARAWSD000057		BCTS	670	1,645	975	5,605				941.2	667.0	425.6	1,092.6	19.5	941.3	769.9	535.4	1,305.3	23.3
PAUL RIVER		CFP	750	2,300	1,550	71,343				5,129.4	1,235.9	2,995.0	4,230.9	5.9	5,161.1	988.9	2,516.0	3,504.9	4.9
PCEAWSD000040		CFP	675	1,910	1,235	8,463				23.0	1.6	4.7	6.3	0.1	23.0	0.7	1.9	2.6	0.0
PEACE WILLISTON		BCTS	649	2,460	1,811	543,656				100,302.4	78,188.2	2,284.8	80,472.9	14.8	102,004.9	84,135.8	2,345.1	86,481.0	15.9
PESIKA CREEK		BCTS	680	2,350	1,670	71,968				213.7	0.0	115.0	115.0	0.2	218.3	0.0	114.5	114.5	0.2
PHILIP CREEK		CFP	740	1,665	925	68,522				21,349.3	10,517.1	5,296.6	15,813.8	23.1	21,635.6	11,618.6	6,076.2	17,694.8	25.8
POINT CREEK		BCTS	680	2,410	1,730	9,959				806.8	0.0	210.2	210.2	2.1	806.8	0.0	199.3	199.3	2.0
POLICE CREEK		CFP	680	2,115	1,435	5,258				322.0	0.0	192.9	192.9	3.7	322.0	0.0	177.5	177.5	3.4
RAINBOW CREEK		CFP	825	1,575	750	31,230				6,958.4	5,491.8	1,262.6	6,754.4	21.6	6,972.9	8,772.6	1,667.3	10,439.9	33.4
RUBYRED CREEK		CFP	675	2,265	1,590	4,380				4.1	2.9	0.3	3.2	0.1	4.1	2.9	0.3	3.2	0.1
SCHOOLER CREEK		CFP	680	2,075	1,395	26,869				522.0	571.7	109.4	681.1	2.5	522.0	492.7	102.9	595.6	2.2
SCOTT CREEK		BCTS	675	2,315	1,640	20,469				846.1	14.9	508.2	523.1	2.6	846.1	14.9	438.4	453.3	2.2
SCOVIL CREEK		BCTS	670	1,600	930	11,457				2,616.4	1,662.3	722.2	2,384.5	20.8	2,617.2	1,637.9	910.5	2,548.4	22.2
SELWYN CREEK		BCTS	675	2,375	1,700	15,399				147.8	0.0	35.3	35.3	0.2	147.8	0.0	20.6	20.6	0.1
SHOVEL CREEK		CFP	680	1,875	1,195	4,435				395.1	93.2	66.7	159.8	3.6	397.8	81.3	67.9	149.2	3.4
SOUTH GERMANSEN RIVE		BCTS	970	2,005	1,035	18,426				859.0	43.4	741.6	785.0	4.3	859.0	37.4	703.8	741.2	4.0
STEVENS ON CREEK		CFP	675	2,320	1,645	13,302				397.7	2.1	338.5	340.6	2.6	397.7	2.1	285.4	287.5	2.2
STRANDBERG CREEK		CFP	670	2,080	1,410	18,308				4,753.4	1,024.0	897.7	1,921.6	10.5	4,760.1	912.5	865.3	1,777.8	9.7
SYLVESTER CREEK		BCTS	835	1,815	980	28,744				4,105.6	3,502.8	773.4	4,276.3	14.9	4,131.7	3,478.5	1,560.5	5,039.0	17.5
TRUNCATE CREEK		BCTS	695	1,970	1,275	7,238				288.1	0.0	205.3	205.3	2.8	301.9	0.0	215.1	215.1	3.0
TSEDEKA CREEK		BCTS	670	1,655	985	13,298				2,279.5	1,003.8	1,338.5	2,342.4	17.6	2,280.6	1,124.3	1,782.8	2,907.0	21.9
TWENTY MILE CREEK		CFP	765	2,020	1,255	18,058				36.2	60.9	140.4	201.3	1.1	78.0	65.8	179.0	244.7	1.4
WEASEL CREEK		CFP	675	1,945	1,270	3,221				270.5	17.5	90.6	108.1	3.4	270.5	9.8	88.9	98.7	3.1
WEST DOG CREEK		CFP	1,025	2,000	975	8,326				45.3	0.0	45.2	45.2	0.5	50.5	0.0	42.0	42.0	0.5

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										Harv Area (ha)	ECA above	ECA below	ECA Area (ha)	PFI	Harv Area (ha)	ECA above	ECA below	ECA Area	PFI
WEST NABESCHE RIVER		CFP	680	2,325	1,645	25,611				583.4	130.0	228.4	358.4	1.4	583.4	130.0	228.4	358.4	1.4
WESTON CREEK		BCTS	675	2,090	1,415	10,746				1,474.5	58.6	626.4	685.1	6.4	1,474.5	54.3	600.0	654.3	6.1
						2,511,669				299,852.4	154,746.6	72,192.9	226,939.5	9.0	306,213.1	174,103.4	78,376.6	252,480.1	10.1

Script Location:

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Resultant Location:

Forest_WIM.WIM_Strategic_Analysis.WIM_Peak_Flow