



**SUSTAINABLE FOREST  
MANAGEMENT PLAN FOR THE  
CANFOR-QUESNEL DFA**

**2006 ANNUAL REPORT**

## **COMMITMENTS TO SUSTAINABLE FOREST MANAGEMENT**

Canadian Forest Products Ltd. (Canfor) believes in conducting its business in a manner that protects the environment and ensures sustainable forest development.

The Canfor Environmental Policy and Forestry Principles detail the commitments to Sustainable Forest Management (SFM) for the Canfor Quesnel Defined Forest Area (DFA). These commitments are available for public viewing on the following link: [www.canfor.com](http://www.canfor.com)

### ***Executive Summary***

#### **Purpose**

This report is prepared as part of the annual assessment to confirm Canfor's continued implementation of SFM registered to the CSA Z809-04 Standard. This report provides a status, to December 2006, of the locally developed measures of the SFMP.

In this report, each measure is re-iterated, and a brief status update is provided. For further reference to the intent of the measures, or the practices involved, the reader should refer to Sustainable Forest Management Plan for the Canfor-Quesnel DFA (SFMP, November 15, 2005, *revised date*).

#### **Overview of Achievements**

For the 2005 reporting year 69% (63 of 91) of the locally developed measures have been met, 31% (28 of 91) are pending and 0% (0 of 91) were not met.

Improvement is shown in the role up of the results of the 2006 report from the 2005 report. The indicators not met have identified opportunities to improve a target for one measure and the timing for performance on the other measure.

For the 2006 reporting year 84% (79 of 94) of the locally developed measures have been met, 14% (13 of 94) are pending and 2% (2 of 94) were not met.

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## Introduction

Canadian Forest Products Ltd. (Canfor) - Quesnel achieved CSAZ809-02 certification in December 20, 2005 for the Defined Forest Area which is described as the management unit (operating area) that covers the replaceable Forest Licence A20011.

This Sustainable Forest Management (SFM) Plan implements the process provided by the SFM Framework. The SFM Framework Document identifies the concepts and rationales supporting this SFM approach. The overall objective of the SFM Framework has been to demonstrate to government and industry resource managers, area residents, stakeholders, and customers of forest resources that it is possible to implement sustainable forest management at the management unit level. The SFM Plan translates the strategic goals of the SFM Framework into operational indicators and measures of sustainability.

A public advisory group, called the North Cariboo Sustainable Forest Advisors (NCSFA) was formed (March 2004) to identify local level measures of SFM. The 91 measures identified by the NCSFA were detailed with associated forest management practices to achieve those objectives in a Sustainable Forest Management Plan (SFMP) for the Defined Forest Area (DFA) in September 2005. This report provides the 2005 performance update for each of the measures.

Generally, the status of the measures reported in SFM Plan (November 15, 2005) described the 2004 condition.

The annual report is intended to serve as a monitoring tool to track the progress and development of the measures. The document briefly describes the measures and provides a detailed status of their 2006 condition. Measures with significant import or trends will be compared to previous years where possible.

Note that where variances are expressed as percentages they are to be treated as the difference or range of variation by percentage points.

**Table: Summary of 2006 Measure Status**

Measure		Target Met	Target Pending	Target Not Met
1-1.1	Ecosystem representation		X	
1-1.2	Representation targets within the Forest Stewardship Plan		X	
1-1.3	Seral stage distribution	X		
1-2.1	Area retained on harvested areas	X		
1-2.2	Stand level retention	X		
1-2.3	Diversity of stand level retention	X		
1-2.4	Coarse woody debris on harvested areas in the THLB	X		
1-2.5	Riparian areas in the THLB	X		
1-2.6	Shrub areas across the DFA	X		
1-2.7	Deciduous leading areas across the DFA	X		
1-3.1	Vertebrate species	X		
1-3.2	Vertebrate species populations remain viable		X	
1-3.3	Management strategies for SARA species	X		
1-3.4	Listed species strategies followed	X		
1-4.1	Stream crossings – compliance with design/standard	X		
1-4.2	Stream crossings – surveyed WQCR		X	
1-4.3	Stream crossings – inspections & measures completed		X	
1-4.4	Temporary stream crossings removed to standard	X		
1-4.5	Regen Delay Period	X		
1-5.1	Designated Protected areas	X		

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Measure		Target Met	Target Pending	Target Not Met
1-5.2	Special sites with biological significance managed in FSP	X		
1-5.3	Management activities consistent – legal objectives	X		
1-6.1	Seeds and seedlings – accordance with regulation	X		
1-6.2	Natural regeneration	X		
1-6.3	Natural ingress in plantations	X		
2-1.1	Site Index in harvested areas	X		
2-1.2	Coarse woody debris in harvested areas	X		
2-2.1	Forest converted to non-forest land use		X	
2-2.2	Cutblock area with road/landing construction	X		
2-2.3	Soil disturbance targets met after harvesting and silviculture	X		
2-2.4	Landslides	X		
2-3.1	Regeneration delay	X		
2-3.2	Compliance with regeneration standards	X		
2-3.3	Compliance with free growing	X		
2-4.1	Treatment plans for natural disturbance events	X		
2-4.2	Number of catastrophic natural disturbance events	X		
3-1.1	Carbon stored in trees	X		
3-1.2	Carbon stored in non-tree vegetation	X		
<del>3-1.3</del>	<del>Total carbon stored- dropped in 2006</del>			
3-2.1	TBD - based on report and CFS process		X	
3-2.2	Management practices to reduce carbon	X		
3-3.1	Interim measures that take carbon from atmosphere	X		
4-1.1	Total value of timber harvested	X		
4-1.2	Timber supply certainty - AAC	X		
4-1.3	Percentage harvested area regenerated to target species	X		
4-2.1	Employment in forestry sub-sector			X
4-2.2	Indirect/induced employment	X		
4-2.3	Percentage dollars spent by forestry sub-sector	X		
4-2.4	Contracts to purchase logs from local sources	X		
4-3.1	Fees paid to municipal and provincial governments	X		
4-4.1	Opportunities for First Nations	X		
4-5.1	Competitive primary milling facility	X		
4-6.1	Assessment of damaging events or agents	X		
4-6.2	Management strategies for damaging events or agents	X		
5-1.1	Potential for marketed non-timber benefits	X		
5-1.2	Number of jobs in the NTF sector		X	
5-1.3	Income from jobs in the NTF sector		X	
6-1.1	Employment by sector – local economy		X	
6-1.2	Income by sector – local economy		X	
7-1.1	Stakeholder analysis	X		
7-1.2	Communication/participation plan	X		
7-1.3	Effective public advisory group	X		
7-1.4	NCSFA review of FSP	X		
7-1.5	NCSFA satisfaction with process	X		
7-1.6	NCSFA endorsement of SFM plan			X
7-2.1	Effective communication of information with the public	X		
7-2.2	Reciprocal knowledge exchange	X		
7-2.3	Website developed and maintained	X		
7-2.4	Timely responses to public inquiries	X		
7-3.1	An adaptive management strategy	X		
7-3.2	A monitoring plan		X	
7-3.3	A forecasting plan	X		

<b>Measure</b>		<b>Target Met</b>	<b>Target Pending</b>	<b>Target Not Met</b>
7-3.4	An information management system	X		
7-3.5	Report and analysis	X		
7-3.6	Communication of monitoring data beyond DFA	X		
8-1.1	Percentage conformance to established rights	X		
8-2.1	First Nations identify resources	X		
8-2.2	Enabling access to resources for First Nations	X		
8-3.1	Consideration and accommodation of known First Nation cultural issues	X		
8-4.1	Accessibility of maps showing baseline cultural uses	X		
8-4.2	Logging details accessible to First Nations	X		
8-4.3	Meaningful First Nations participation	X		
9-1.1	Sustain baseline levels of outdoor recreational activities	X		
9-1.2	Access maintained for recreation use	X		
9-1.3	Balance of recreation opportunities maintained		X	
9-2.1	Compliance with visual quality objectives	X		
9-2.2	Compliance with visual quality set in CCLUP	X		
9-3.1	Identification of unique or significant places and features and protected areas	X		
9-3.2	Degree of protection of unique or significant social, cultural or spiritual value	X		
9-4.1	Number of safety incidences	X		
9-4.2	Observance of recognized safety standards	X		
9-4.3	Implemented and effective safety policies	X		
9-4.4	Safety occurrence summary	X		
9-5.1	Policy for donations is in place	X		
9-5.2	List of donations	X		

## Description and 2005 Condition of the SFM measures for the Canfor Quesnel DFA

### Ecological Values – Criterion 1, 2, and 3

<b>Criterion 1</b>	<b>Biological richness and its associated values are sustained in the defined forest area (DFA)</b>
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<b>Indicator 1-1</b>	Ecologically distinct ecosystem groups are represented in an unmanaged state in the DFA to sustain lesser known species and ecological function.
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### Measure 1-1.1

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-1.1 An ecosystem representation analysis exists that describes the number, size and type of distinct ecosystem groups in both the THLB and NHLB and recommends proportion of area that should be represented in an unmanaged state.	1 analysis (0)	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### What is this measure and why is it important?

Maintaining representation of the full range of distinct habitat types across the land base is a critical component of managing to sustain biological diversity. An ecosystem representation analysis is necessary first to establish the number and area of ecosystem types within a given area (and thus determine which types are common and which are rare), and second to identify which ecosystem types are poorly represented in the NHLB. Where adequate representation is achieved, more intensive use of the managed land base can occur; where representation is lacking, management strategies can be developed to transfer a portion of each under-represented type to the NHLB.

#### 2006 Condition

This measure is pending awaiting completion of Predictive Ecosystem mapping for the Quesnel TSA. The mapping was expected to be completed for the Quesnel TSA in the fall of 2006. A fire burned some quality assurance field data for the PEM project delaying the final completion till fall 2007.

**Measure 1-1.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-1.2 Forest Stewardship Plan consistency with agreed upon representation targets	100% (0)	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Ecosystem representation is a cornerstone of the biodiversity approach proposed in this SFM Plan. This measure ensures Forest Stewardship Plan (FSP) compliance regarding ecosystem representation in the non-harvested land base. The process for the representation analysis will be peer-reviewed and presented to government staff for acceptance. The subsequent findings (i.e. the size of each distinct habitat type and its representation in an unmanaged state) will be presented to the NCSFA, local government agencies and provincial experts for review. Input from these groups will then be used to develop representation targets and set priorities for management.

**2006 Condition**

This measure is pending upon completion of PEM and incorporation into district policy and the FSP. No change for this measure in 2006.

**Measure 1-1.3**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-1.3 <i>Interim Measure:</i> Percent area by old and mature+old seral stage by Landscape Unit and BEC subzone for the Timber Harvesting Land base (THLB) within the DFA that is affected by forest management	Per CCLUP biodiversity strategy	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure determines the amount of early, immature, mature and old forest that occurs within each Landscape Unit by BEC variant. This interim measure is a surrogate for seral stage by habitat type, which will be determined after the completion of the representation analysis. Seral stage will be listed as a sub measure under measure 1-2.1 once the representation analysis is completed.

**2006 Condition**

No change for this measure in 2006 from the information by Landscape Unit provided in the SFMP(2005). The updates to the CCLUP biodiversity strategy have allowed for a onetime drawdown of the old+mature seral targets to allow for salvage of the Mountain Pine Beetle attacked stands. The measured is considered met.

Note that the extent of the MPB Epidemic will affect the old+mature targets and values well into the future. A new forest cover inventory will be required to provide information on the actual seral state of the forests following the MPB epidemic and salvage harvesting.



<b>Indicator</b> 1-2	The amount, distribution, and diversity of terrestrial and aquatic habitat type elements and structure important to sustain biological richness are sustained.
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The following “what and why” applies to all the 1-2 measures.

**What is this measure and why is it important?**

These measures address the availability of certain habitat elements that are important to the continued maintenance of forest-dwelling vertebrate and invertebrate species within the DFA. Until more detailed habitat data becomes available, the interim targets will rely on the baseline data provided by the Genus database. These targets will be modified to reflect improved data as it becomes available.

The elements or sub-measures listed above provide critical foraging, breeding or shelter habitat to many species of birds, mammals, amphibians, insects, bryophytes and fungi. Species rely not only on the amount and distribution of these habitat features, but also on specific characteristics. For example, the size and decay class of standing dead trees determines the utility for cavity nesting bird species. Riparian-associated shrubs are used differently by shrub-nesting birds than are upland-associated shrubs.

**Measure 1-2.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-2.1 Average area retaining dead and/or live standing trees on harvested areas in the THLB	Average 8% (12%) of the area harvested annually across the DFA retains snags and/or live trees/ha where prescribed on harvested areas immediately following harvesting	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**2006 Condition**

The average area retained for blocks with harvesting completed in 2006 was 22%. The value for the measure is higher than the variance allowed for the target. This higher value is consistent with the increased retention that has been requested by the Ministry of Forests when larger blocks are proposed for the salvage of beetle killed timber. Of the 28 block 9 were over 200ha in size.

Retention requirements are met for a cutting permit The average percent retention per block was 10.7 %. Some small blocks have no retention while the bigger blocks are expected to have more. This allows planners and fieldcrews to select the best locations for the retention. This high result, for the areas with harvesting completed, can be partly due to harvest scheduling. Blocks with higher retention were harvested in 2006. 8 blocks with retention of 15% or more were completed.

The result is 2% above the approved variance but is consistent with the Quesnel enhanced retention strategy. It does warn planners to monitor retention levels.

**Table : Average of the area retained on harvested areas**

Year	Total Area with Harvesting completed (ha)	Average % Retention
2004	4622	10.6
2005	3730	10.4
2006	2319.7	22.0

**Measure 1-2.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-2.2 Stand level retention (eg. WTPs)	100% conformance with the current district policy (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**2006 Condition**

Current practices follow the direction provided by the Quesnel District Manager for wildlife tree patch retention. Higher retention is being provided in the larger salvage blocks consistent with the *Quesnel District Enhanced Retention Strategy (Feb2006)*. Canfor worked other licensees and the Ministries of Forests and Environment to develop best practices for retention during the salvage AAC uplift. The measure is considered to be met.

**Measure 1-2.3**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-2.3 Diversity of stand level retention	Conformance with stand level retention strategy in the SFMP (100)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**2006 Condition**

This measure was revised to a strategy in the SFMP from the previous target where it was to be in the FSP. It was considered that more flexibility is provided when it resides with the SFMP. There were no instances where blocks were not in conformance with the stand level retention strategy.

**Measure 1-2.4**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-2.4 Coarse woody debris on harvested areas in the THLB	≥ 4 logs (2m or > length with a 7.5 cm or > top) per ha	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**2006 Condition**

A system for collecting this information was implemented in 2006. The supervisors note in the final inspection that this has been met. Instances where the conditions have not been met are identified as environmental incidents, which are then tracked. There were no incidents identified in 2006. It is considered that all of the blocks harvested in 2006 met the target.

**Measure 1-2.5**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-2.5 Riparian areas in the THLB	Riparian strategies or standards will meet or exceed legal requirements (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**2006 Condition**

No change to this measure in 2006. Riparian strategies meet and/or exceed legal requirement. No incidents were identified in riparian areas. The target is considered to be met.

**Measure 1-2.6**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-2.6 Proportion of shrub areas across the DFA	Minimum 3% of the area of the DFA (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**2006 Condition**

No change for this measure in 2006. The shrub areas mostly classed as Non commercial Brush areas (NCBr) comprised 3% of the crown forested land in the DFA. Information was provided by the 2005 forecasting project. The target is considered to be met.

### Measure 1-2.7

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-2.7 Proportion of deciduous leading areas across the DFA	1.5% of the area of the DFA (0.2%)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### 2006 Condition

No change for this measure in 2006. The deciduous leading areas (>80% deciduous species) comprised 1.5% of the crown forested land in the DFA. Information was provided by the 2005 forecasting project. The target is considered to be met.

<b>Indicator 1-3</b>	Productive populations of selected species or species guilds are well distributed throughout the range of their habitat
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### Measure 1-3.1

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-3.1 Develop report recommending vertebrate species needing monitoring.	1 report (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### What is this measure and why is it important?

This measure addresses the identification and evaluation of appropriate vertebrate ‘indicator species’ on which monitoring should focus. While monitoring species is important to assess whether or not Indicators 1 and 2 (ecosystem representation, habitat elements) are maintaining persistent populations of species, it is simply not possible to monitor all species. Instead, a set of forest-dwelling species will be selected and evaluated as candidates for monitoring. These species must be practical to monitor, sensitive to forest practices, and able to provide information that can guide management. In addition, a list of species of special management concern will be identified for this area. Species of special management concern are not necessarily good indicators of habitat quality and quantity, but are deemed to be socially important in the Quesnel DFA.

This measure has been developed to ensure that a locally relevant set of vertebrate species is established for the DFA. Work on monitoring vertebrate species will be developed once the species list, recommendations for which species and appropriate methods for monitoring have been peer reviewed.

**2006 Condition**

A report narrowing down the potential species to monitor was been completed. Further work by Canfor and researchers has identified songbirds to have potential for the monitoring of stand level values. Projects have been started to inventory birds in other division. A Quesnel project is planned for 2007, subject to funding.

**Measure 1-3.2**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
1-3.2 Recommended vertebrate species populations remain viable	Monitoring Plan and baseline information TBD	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure ensures that a commitment is made to monitoring the populations of those indicator species selected under Measure 1-3.1. Under this measure, a monitoring plan will be developed for select species, with baseline information being collected over the next two years. Baseline data on the distribution and estimated numbers of each species within the DFA will allow overall trends in species populations to be monitored through time.

**2006 Condition**

Canfor has been corporately working on a songbird monitoring project. The piloting at other divisions has occurred and it is planned that Quesnel will work towards setting up a baseline monitoring project in 2007.

**Measure 1-3.3**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
1-3.3 Develop Management Strategies for identified local Forest-Dwelling Species at Risk as identified in Schedule One of SARA	1 strategy per species (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

The Federal Species at Risk Act identifies specific species at risk for which industry must develop management strategies. The MWLAP has determined that the list of species of wildlife in Schedule One of SARA are a category of species at risk that may be affected by forest or range management on Crown land and require protection in addition to that provided by other mechanisms. This measure ensures that a management strategy is developed for each Species at Risk identified within the Canfor Quesnel DFA in order to sustain populations within an acceptable range as influenced by forest management activities.

**2006 Condition**

No forest dwelling species at risk identified in the DFA. The target is considered to be met.

**Measure 1-3.4**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
1-3.4 Percentage of Listed Species from 1-3.3 management strategies that are followed	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure ensures commitment to the development and implementation of management strategies for Schedule One Species at Risk within the Canfor Quesnel DFA. The management and monitoring of endangered, threatened and special concern species reflects the commitment of this plan. By following the recommended strategies, management can contribute to the long-term persistence of these species and their required habitats across the land base.

**2006 Condition**

No forest dwelling species at risk identified in the DFA. The target is considered to be met.

<b>Indicator</b> 1-4	Water resources will be sustained by maintaining water quality and quantity
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**Measure 1-4.1**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
1-4.1 The percentage of Canfor stream crossings constructed which are planned and installed to design/standard	100% conformance (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure ensures that stream crossings within the DFA are designed and built according to the standards outlined in the Forest and Range Practices Act. The quality and quantity of water is important both as habitat for aquatic species and for agricultural or domestic use. Within the Canfor Quesnel DFA, the primary concern for water quality is the maintenance of habitat for aquatic species. Forestry roads can have a large impact on water quality when they intersect with streams including potentially increasing sedimentation into water channels. Monitoring the adherence of stream crossing construction to these standards ensure that crossings, particularly

those posing a high risk to water quality, are built using the most current knowledge and technology.

**2006 Condition**

No crossing incidents were identified where Canfor stream crossings constructed were not planned and installed to design/standard in 2006. The target is considered to be met.

**Measure 1-4.2**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
1-4.2 The amount of sediment entering streams due to forest management activities will not degrade the aquatic environment using the WQCR process-the percentage of surveyed stream crossings identified with a high WQCR rating on forestry roads within the DFA for which participants are responsible (*WQCR – water quality concern rating)	Process to be developed and implemented	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure was developed for other Canfor divisions SFM Plans and identifies stream crossings that possess a high Water Quality Concern Rating (WQCR). The primary concern around water quality within the Canfor Quesnel DFA is the maintenance of habitat for aquatic species. The primary sources of sedimentation resulting from forestry practices are roads, landslides and stream bank instability. Increases of sedimentation into streams over natural levels have been shown to have negative impacts on fish, other aquatic life, and their habitat (FSJ SFM Plan, 2003).<sup>1</sup>

**2006 Condition**

A consultant provided an introduction of the Stream Quality Crossing Index process to Canfor staff in November. The Process is planned for some revisions in early 2007 to combine the SQCI process with a Ministry developed process. Field work to begin in summer 2007.

**Measure 1-4.3**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
1-4.3 The percentage of stream crossing inspections and their resulting mitigation measures completed according to schedule	100% conformance (10 %)	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

<sup>1</sup> Fort St. John Pilot Project. Sustainable Forest Management Plan. Fort St. John. 2003

**What is this measure and why is it important?**

This measure is meant to ensure that any stream crossings found to not be meeting standards will have mitigating measures implemented within a specified time.

**2006 Condition**

The process and monitoring for this measure will be initiated in 2007.

**Measure 1-4.4**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
1-4.4 The percentage of temporary stream crossings that are removed according to standards	100% compliance (10)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure ensures that temporary stream crossings within the DFA are removed in compliance with the requirements outlined in the Forest and Range Practices Act. These requirements include timing of removal as well as the procedure for removal. Resource managers have found that removal of crossings has the potential to cause significant sedimentation. This measure complements the others stream crossing measures and ensures the stream crossing through to the end of its use.

**2006 Condition**

No instances were identified where temporary streams were not removed according to standards. The process to track this measure was developed in 2006.

**Measure 1-4.5**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
1-4.5 Regen Delay period	See 2-3.1	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure relates to water quantity. The performance of meeting or beating the regen delay following harvesting ties to hydrological effects that a quickly established plantation will contribute to as it matures. This measure is particularly important with the increase harvesting levels to salvage the MPB killed stands. If the targets for regen delay are met then the stand will be on its way to contributing to the control of water quantity and this measure will have been met.

**2006 Condition**

No instances were identified where regen delay was not met. The target for 2-3.1 was met. Therefore this measure has been met.



<b>Indicator</b> 1-5	Government designated protected areas and sites of special biological significance are sustained at the site and sub regional level
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### Measure 1-5.1

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-5.1 The percentage and hectares of total land-base comprised of government designated protected areas in the Quesnel District	1 list (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### What is this measure and why is it important?

This measure examines the number and area of all existing parks, reserves and protected areas within the Quesnel Forest District. It identifies the overall contribution of parks to protection at the sub-regional level, and is the first step towards identifying the contribution of parks to ecological representation.

#### 2006 Condition

No change to this measure in 2006. See list below. The total TSA area is 1.65 million ha; therefore, the total percentage of land base of government designated protected areas in the TSA is 12.6 %.

The target is considered to be met.

**Table : Parks & Protected Areas in the Quesnel District<sup>2</sup>**

Parks and Protected Areas*	Net Area(ha) within Quesnel District
Narcosli Lake ER + Goal 2	2301
Mount Tinsdale ER	419
Barkerville Park	54
Bowron Lake Park	113,968
Cariboo Mountains Park	29,378
Cariboo River Park	1,268
Cottonwood River Park	1
Dragon Mtn Goal 2	1839
Finger Tatuk Park	9
Ilgachuz Range ER	2,214
Itcha Ilgatchuz Park	38,074
Kluskoil Lake Park	15,362

<sup>2</sup> BC Parks website located at [wlapwww.gov.bc.ca/bcparks](http://wlapwww.gov.bc.ca/bcparks) and information provided by Canfor Quesnel

Parks and Protected Areas*	Net Area(ha) within Quesnel District
Pinnacles Park	128
Puntchesakut Lake Park	37
Ten Mile Lake Park	343
Titetown Lake (Goal 2)	1016
Wendle Park	208
Wentworth Lake (Goal 2)	617
Total area	207,187

\*ER= ecological reserves, PA= protected areas, otherwise, it's a park.

### Measure 1-5.2

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-5.2 The percentage of sites of special biological significance are managed for within the Forest Stewardship Planning process	100% of discovered and documented sites (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### What is this measure and why is it important?

This measure ensures that biologically important sites are documented and appropriately managed for under the FSP. This analysis and inventory should include important or critical wildlife habitat, environmentally sensitive sites, and unusual or rare forest conditions, as established according to scientific and traditional criteria. The identification of these sites is important as they may represent high conservation values that are unique to the Canfor Quesnel DFA. The subsequent development of strategies to manage for and monitor these sites will contribute to their continued persistence within the Canfor-Quesnel DFA.

#### 2006 Condition

The proposed FSP identified the known ecologically sensitive areas. No additional sites of special biological significance were identified in 2006.

### Measure 1-5.3

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-5.3 The proportion of forest management activities consistent with legal objectives and general wildlife measures of approved wildlife habitat areas, ungulate winter range, caribou management areas and critical fish habitat	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure ensures compliance of forest management practices with the legal objectives and general wildlife measures of approved habitat areas, ungulate winter ranges, caribou management areas and critical fish habitat. Compliance with these legislated objectives is important to safeguard against the potential degradation or loss of these values over time.

**2006 Condition**

No incidents identified. 100% compliance of forest management practices with the legal objectives and general wildlife measures of approved habitat areas, ungulate winter ranges, caribou management areas and critical fish habitat. The target is considered to be met.

<b>Indicator</b> 1-6	Forest management activities will conserve species genetic diversity
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**Measure 1-6.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-6.1 The proportion of seeds for coniferous species collected and seedlings planted in accordance with the current regulation	100% compliance (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Genetic diversity of seedlings used for reforestation in BC is ensured through the seedlot registration policies and standards requirements of the Ministry of Forests (MOF). Cones and seed obtained from wild forest stands must be collected from a minimum of 10 trees. The MOF licenses tree seed orchards that ensure their seed sources maintain a recognized standard for genetic diversity. These rules are in place to ensure that the seed collected is appropriate for the seedlings planted in local conditions and that they contain sufficient genetic diversity to withstand natural disturbance events (including climate change to some degree).

**2006 Condition**

Excepting the incident noted below planting was completed in conformance with approved stocking standards. Cone collection continued into 2006, to capture pine seed from the best known areas before the seed drops out of the dead cones. Collection and sorting of the cones complied with provincial standards.

One incident occurred in 2006. A miscommunication caused CP421-1 to be planted with stock that was just outside its currently accepted zone. The ministry was notified and considers that Canfor is responsible to ensure the stock will meet growing standards. The stock is considered to be acceptable by the Silviculture Forester. Canfor will continue to monitor the performance of this stock through to free growing.

The target is considered to met.

**Measure 1-6.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-6.2 The area that is scheduled for regeneration, the proportion designated for natural regeneration	30% (15%)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Natural regeneration of local tree species contributes to the genetic diversity for those species. As with measure 1-6.1, maintenance of genetic diversity is important in ensuring that tree species are adapted to local conditions and can withstand natural disturbance events and agents.

**2006 Condition**

Natural regeneration was more commonly used in the past. In Quesnel, fill planting started in 1993 and phased into almost 100% planting, following harvesting, by the year 1998. In recent years the silviculture strategy has looked to increase the amount of harvested area designated for natural regeneration.

The target was met

**Table: Proportion of the area designated for natural regeneration.**

Year	% Area designated
2002	3.3
2003	11.6
2004	17.5
2005	24.6
2006	24.1

**Measure 1-6.3**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
1-6.3 The amount of natural ingress of trees found during surveys of free growing stands.	90% (10) of stems in naturally regenerated stands  40% (20) of stems in planted stands	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Natural regeneration of local tree species contributes to the genetic diversity for those species. As with measure 1-6.2, maintenance of genetic diversity is important in ensuring that tree species are adapted to local conditions and can withstand natural disturbance events and agents.

**2006 Condition**

This year free growing surveys found that 98.5% of the stems in naturally regenerated stands and 84.2% of the stems in planted stands could be attributed to be grown from local genetic sources (natural ingress). This demonstrates that local genetics dominate the plantations even if these areas have been planted.

The results also showed that the planted areas are more diverse. This is partly due to the selection for areas to plant versus natural regen. Areas are designated for natural regeneration based on the likelihood of the natural trees to out-compete brush and non crop trees. Dry pine sites, with little competition, are likely to regenerate themselves to pine. Areas with more deciduous competition are generally planted and will usually be more suitable sites for planting spruce.

The % ingress for the natural regen stand was within the variance. The % ingress for the planted stand was higher than the variance. This is, however, considered acceptable as it shows more of the local genetic stock continues to grow onsite. The variance for this measure will be proposed to be increased to allow for this. This target should be also be reviewed if after few years of data is collected it is found that the local genetic stock continues to dominate. Note that this potential may be affected by the dying seed source due the Mountain Pine Beetle epidemic.

The measure is considered to be met.

The 2005 data was found to be incorrect. It was corrected with the new GENUS query.

Data from Free Growing Surveys by year

Year	Total Inventory (#Trees)	Total Area (Ha)	Ingress by (%)		
			Conifer	Deciduous	Total Ingress%
2004 Nat	21,000,000	2400	87.5	4	<b>91.5</b>
2005 Nat	5,061,406	789	93.6	1.8	<b>95.4</b>
2005 Plant	15,764,134	3091	70.6	11.3	<b>81.9</b>
2006 Nat	4,451,864	873.9	94.4	4.1	<b>98.5</b>
2006 plant	7,414,334	1452	71.5	12.7	<b>84.2</b>

<b>Criterion 2</b>	<b>The productive capability of forest ecosystems within the Timber Harvesting Land Base (THLB) is sustained.</b>
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<b>Indicator</b> 2-1	Biological components of forest soils are sustained
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**Measure 2-1.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
2-1.1 Interim measure - Site Index for harvested areas is sustained	Average post-harvest site index (at free growing) will not be less than average pre-harvest site index on harvested blocks	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Sustaining forest ecosystem productivity requires determining and designing forest practices that will maintain key soil resources so that harvesting does not cause continual degradation of site quality over time.

Site index is an expression of the forest site quality of a stand, defined as the height of the dominant or co dominant trees in a stand at a specified age. Site index equations are calculated for individual species using mensuration data. It is commonly used as an indicator of site productivity as it infers that trees or stands with greater growth at a given age have access to more key resources required for biomass production. The higher the site index for a given species in a given region, the higher the productivity or the quality of the site. Site index is sensitive to changes in ecological variables including soil nutrients, soil moisture, and others.

This measure provides a relative comparison of a post-harvest average site index (at free growing) compared to the pre-harvest site index (as represented by inventory estimates) in the THLB.

**2006 Condition**

The Site Index estimated from free growing surveys in 2006 are on average 2.9 greater than the average Site Index estimate (16) from the Forest Cover mapping.

A Forest Sciences Program project was started in 2006 to measure the carbon in soils and model harvest rotation impacts on soil carbon. This project could identify a process to measure soil productivity.

**Measure 2-1.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
2-1.2 Amount of coarse woody debris on harvested areas (TBD-modelling of soil nutrients; forest floor mass and humus mass)	Interim Target: $\geq 4$ logs (2m or greater length; 7.5cm or greater top diameter) per ha after harvesting (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Beyond providing food and habitat for animals and invertebrates and growing sites for plants, coarse woody debris is a source of nutrients for soil development and structure in streams to maintain channel stability. Past forestry practices have encouraged the removal of CWD from sites for a number of economic and/or safety reasons, potentially at the expense of soil nutrients.

This measure quantifies the retention of appropriate amounts of CWD on site following harvesting operations as part of the strategy for maintaining soil productivity within the THLB. Within the THLB, CWD is to be retained in blocks, within wildlife tree patches, riparian areas, and in unsalvaged timber (due to fire & insects). Within the NHLB it is assumed that natural processes will result in the maintenance of appropriate levels of CWD.

**2006 Condition**

No instances were identified where blocks did not meet the target. It is considered that all blocks harvested in 2006 met the interim target.

In 2007 a baseline study will be conducted in relation to residue and waste measurements to identify the volumes of woody debris left dispersed on the blocks.

<b>Indicator</b> 2-2	Productive land-base loss as a result of forestry activities is minimized
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**Measure 2-2.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
2-2.1 Area of THLB converted to non-forest land use through forest management activities	1.9% (1%) (from TSR 2 pg. 20)	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

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 measure 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 agriculture use.

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.

**2006 Condition**

No Change in 2006 for this measure. The measure is pending subject to road data being available to calculate this value using GIS tools. It is planned that with the Genus implementation and data complete the measure will be calculated for the 2007 annual report

**Measure 2-2.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
2-2.2 Average percent of all cutblock areas having roads/landing construction as a result of forest management activities	Average 5% (of cutblock areas) (2)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure quantifies the amount of productive land base loss due to road and landing construction in order to assess the progress towards the target. In order to continue with timber harvesting within the THLB, new roads and landings will need to be constructed over time in order to access available timber. Forest managers must balance the development of new roads in



a road network system with the maintenance of existing roads, as well as the removal and rehabilitation of some existing roads.

The percentage of the land base classified as road and/or landings should be minimized in order to minimize the loss of the productive land base as a result of forestry activities.

As with the previous measure, 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.

**2006 Condition**

The blocks harvested in 2006 had 2.9% of their area comprised of roads. This is slightly below the variance. The 9 large blocks that had harvesting completed in 2006 contributed to this low value.

The target is considered met.

**Table: Average % of cutblock area with roads and landings as a result of Forest management activities.**

Year	Average % of cutblock area
2004 baseline	3.8
2005	3.9
2006	2.9

**Measure 2-2.3**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
2-2.3 Percent of blocks meeting soil disturbance targets after harvesting and silviculture	100% compliance with targets (10%)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Soil is one of the most important physical resources in the planning area, as it is directly linked to the production of forest biomass and all of its associated attributes. The intent of Canfor is to ensure that the soil resource is adequately protected.

Soil disturbance is defined in this SFM Plan as disturbance caused by a forest practice on an area, includes the areas of the cutblock that may be compacted, rutted, screefed and areas of dispersed disturbance due to forest management activities (harvesting and silviculture). Indicator measures are designed to detect the loss of productive land area at the cutblock level and to ensure that cumulative impacts are within acceptable levels

**2006 Condition**

No instances were identified where blocks did not meet soil disturbance targets after harvesting. The target is considered to be met.

**Measure 2-2.4**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
2-2.4 Number and size of landslides resulting from forest management activities	< 10 cumulative ha in the THLB for slides greater than 0.5ha in size (0.5ha)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Landslides are mass movements of soil or debris that can result in non-productive areas or reduced productivity for forested sites. In both the NHLB and THLB, landslides can occur as a result of many natural processes. In the THLB, activities such as timber harvesting and road building can create conditions that initiate slides especially when these activities occur on unstable or potentially unstable terrain. Loss of soil productivity due to landslides related to forestry practices will be minimized as part of sustaining the overall productive capability in the THLB.

**2006 Condition**

No instances were identified where landslides greater than 0.5Ha occurred in 2005. The target is considered to be met.

<b>Indicator</b> 2-3	Total growing stock of merchantable and non-merchantable tree species on forest land available for timber production
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**Measure 2-3.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
2-3.1 Regeneration delay period	Planted: 2 years after harvest (2) Natural: 4 years after harvest (3)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Regeneration delay is specified in a prescription and is defined as the time between the start of harvesting and the earliest date by which the prescription requires a minimum number of acceptable, well-spaced trees per hectare to be growing on the cutblock. The regeneration delay period varies by species and the regeneration method.

**2006 Condition**

No instances were identified where blocks did not meet regen delay in 2006.

The GENUS report that was developed for this measure identified some issues with the transition from Phoenix to GENUS.

For the available information the measure was met. Note that the previous years numbers were revised using the GENUS query.

**Table: Average years to declare regen delay met following the start of harvesting.**

Year	Years for regen delay to be declared met	
	Planted blocks	Natural blocks
2004	3.5	5.4
2005	2.8	NA
2006	2.9	NA

### Measure 2-3.2

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
2-3.2 The percent compliance with regeneration standards set in FSP (ha)	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### What is this measure and why is it important?

Regeneration standards exist to ensure that appropriate species are reforested on harvested areas to within acceptable numbers. The Ministry of Forests sets out what species are preferred and acceptable for specific biogeoclimatic site series. The stocking standard is linked to the Allowable Annual Cut (AAC) calculations in terms of meeting the desired density and species composition of future stands.

#### 2006 Condition

No instances were identified where regeneration standards did not comply with standards in the FDP. FSP was developed in 2006, it is expected to be approved in 2007.

### Measure 2-3.3

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
2-3.3 The percent of harvested area achieving free growing by assessment dates	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure tracks the percentage of harvested blocks that meet free growing obligations across the DFA, thereby ensuring sustained productive capability of forest ecosystems. A free growing stand is defined as a stand of healthy trees of a commercially valuable species that has met height criteria and the growth of which is not impeded by competition from plants, shrubs or other trees. The free growing dates are established based on the biogeoclimatic classification of the site and the tree species prescribed for planting or left for natural after harvest.

**2006 Condition**

No instances were identified where stands did not meet free growing standards by the assessment dates.

<b>Indicator 2-4</b>	Natural disturbance levels and risk levels are managed for such that resistance to catastrophic change and the ability to recover on the landscape level is sustained.
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**Measure 2-4.1**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
2-4.1 Percent of significant detected natural disturbance damaging events in the THLB which have treatment plans prepared and implemented	Plan for 100% within first year of detection, implement as scheduled (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Natural disturbance events occur at various times in the DFA. These events include wildfire, wind events and insect outbreaks. Significant or large scale damaging events can have a detrimental impact on ecosystem function if attempts are not made to lessen the impact. Canfor can assist government in developing and implementing treatment plans for significant damaging events. This measure is meant to ensure that natural disturbance damaging events are identified and that treatment plans are developed in a timely manner. A significant natural disturbance event is defined as an area of disturbance greater than 500ha.

**2006 Condition**

The **Mountain Pine Beetle** continues to be the significant damaging agent in the DFA. Planning and Operational activities are ongoing to manage the effects of the epidemic that took hold in the mid 1990s.

Three **natural fires** occurred during the summer of 2006. All three were lightning strikes that went unnoticed till they had reached large sizes. Their gross sizes were:

Watlus lake Fire (C10157) 8584Ha

Kluskoil Fire (C10161) 11485 Ha

Fire (C10204) 13ha

The fires grew to the majority of their size in the first 2 days of burning. Improved weather conditions were the main factor in the ability to control the fires. Canfor staff were called out to assist with locating equipment and personnel to fight the fire and to locate line for equipment to build a guard around the fire perimeters.

Following up after the fire the areas were reviewed to determine:

- if salvage of the burned areas was possible.
- the area of plantations that were damaged
- the treatments required to regenerate the burnt plantations
- the responsibility for regenerating the burnt plantations.

It was determined that the burned areas would not be salvaged. This is primarily due to the large amount of salvage wood available and the zero tolerance for wood chips with burnt fiber. These unmanaged areas will be monitored for their natural regeneration and now comprise large areas with natural disturbance conditions within the timber harvesting landbase. Plans were put in place for Canfor to regenerate blocks that had not already been planted and to request funding to regenerate damaged plantations.

No other significant damaging agents were identified in 2006.

**Measure 2-4.2**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
2-4.2 Number/area of catastrophic natural disturbance events as a result of forest management practices	0% (Report variances)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Although natural disturbances may occur on the land base, forest practices should not create conditions or trigger a catastrophic event. Catastrophic is defined as long-term detrimental event with effects lasting 10 or more years.

**2006 Condition**

No instances of natural disturbance events as a result of forest management practices. The fires of 2006 were natural events resulting from lightning strikes.

<b>Criterion 3</b>	<b>Forest ecosystem contributions to global ecological cycles are sustained within the DFA</b>
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<b>Indicator 3-1</b>	The total forest ecosystem biomass and carbon pool, by forest type, age class, and successional stage is sustained
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### Measure 3-1.1

<b>Measure:</b>	<b>Target (Variance):</b>	<b>Status of Target</b>
3-1.1 Estimated amount of carbon stored in trees in the TSA (converted from TSR M3/ha)	75 ton/ha (15)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### **What is this measure and why is it important?**

Forest carbon has recently become a key SFM value, especially in view of Canada's international commitment to lower its net carbon outputs to the atmosphere as part of the Kyoto Protocol. Forest ecosystems are an integral part of the global carbon cycle. Trees and vegetation sequester carbon from the atmosphere through the process of photosynthesis and carbon is stored in several components of forests including tree biomass, plant biomass, coarse woody debris, forest floor litter and soil. Forest soils are a large but relatively stable reservoir of carbon with minimal changes over time. In contrast, variations in carbon storage in tree biomass are the dominant factor regulating temporal patterns in total ecosystem storage. Timber harvesting results in biomass carbon being transferred for use in forest products or the production of bio-energy while breakage and waste from timber harvesting can contribute to the detritus carbon pool. Discarded forest products are recycled, burned, or stored in landfills, hence, with each activity resulting in different rates and forms of carbon release.<sup>3</sup>

#### **2006 Condition**

The current value for this measure is 75 ton/ha. Information for this measure was derived by Forest Ecosystem Solutions from the 2005 scenario project. The measure will be recalculated upon a Timber Supply Review and/or when new tools or information are available.

The 2005 scenarios showed that this value is expected to drop over the next ten years as a result of the Mountain Pine Beetle killing the Pine stands. After the ten year period it is expected that Total Ecosystem Carbon will begin to recover. The uplift scenario (factors that could apply to uplift the timber available for harvest, e.g. prove site productivity is higher than assumed, fertilization ) showed that there is potential to increase the carbon stored close to 2005 levels after 30 years.

<sup>3</sup> Canadian Forest Service, Forest Carbon Accounting: <http://carbon.cfs.nrcan.gc.ca>

### Measure 3-1.2

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
3-1.2 Estimated carbon in non-tree vegetation	75 ton/ha (15)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

The rationale for the importance of the non-tree vegetation measure to the sustainability of carbon cycles is the same as for trees (3-1.1). This component of the forest carbon pool is likely to consistently act as a carbon sink over the course of a harvest rotation and across the DFA (i.e. not for a specific cutblock) whereas the tree component will act as both a sink and a source, depending on the silvicultural stage of the forest.

**2006 Condition**

The current value for this measure is 75 ton/ha. Information for this measure was derived by Forest Ecosystem Solutions from the 2005 scenario project. The measure will be recalculated upon a Timber Supply Review and/or when new tools or information are available.

A Forest Science Program project was continued in 2006 to determine the use of soil carbon as an indicator of soil productivity.

<b>Indicator</b> 3-2	The forest products carbon pool is maintained or increased
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### Measure 3-2.1

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
Plan to plan based on report and process being developed by Canadian Forest Service (CFS)	TBD July 2006 (timing dependant on when Carbon Budget Model is available from CFS)	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure evaluates the role that forest products play in the sequestration, cycling, or emission of carbon. Harvested wood releases its carbon at rates dependent upon its method of processing and its end-use. Provided the forest is fully regenerated, forest harvesting could result in a net reduction in carbon emissions if the wood that is harvested is used for long-term products such as lumber.

**2006 Condition**

The CFS model was not available in 2006. A project regarding the carbon budget model was initiated for the Canfor-Chetwynd TFL 48 using the Canadian Forestry Service the results are expected in spring 2007. Following the review of this project it will be determined how and when the CFS model can be used in Quesnel.

**Measure 3-2.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
Management practices that can reduce the rate of release of carbon	Develop and implement strategies to reduce carbon output rates	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure evaluates the role that forest management practices play in the release of carbon. Harvested wood releases its carbon at rates dependent upon its method of processing and its end-use. Provided the forest is fully regenerated, forest harvesting could result in a net reduction in carbon emissions and management strategies may be developed and implemented to slow the release of carbon.

**2006 Condition**

Strategies that reduce the output of carbon were implemented in 2006. See Appendix for 3-2.2 strategy document.

<b>Indicator</b> 3-3	The processes that take carbon from the atmosphere and store it in forest ecosystems will be sustained
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**Measure 3-3.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
3-3.1 <i>Interim measures</i> – Many of the measures that Canfor are monitoring will contribute to the knowledge of carbon status and processes. Those measures have explicitly not been repeated here. Measures related to carbon sequestration include: <ul style="list-style-type: none"> <li>• Deciduous, shrubs 1-2.1</li> <li>• Area of THLB converted to non-forest land use through forest management activities 2-2.1</li> </ul>	As per targets set under each measure write-up	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met



<ul style="list-style-type: none"> <li>• The percent of cutblock area having road/landing construction 2-2.2</li> <li>• The percent compliance with regeneration standards 2-3.2</li> <li>• The percent of area in compliance with free growing measures 2-3.3</li> <li>• Regeneration delay 2-3.1</li> <li>• Volume of timber (AAC tracked as part of TSR) 4-1.2</li> </ul> <p>Plan to plan based on report and process being developed by Canadian Forest Service (CFS).</p>	<p>April 2006 (on or before depending on when CBM is available from CFS)</p>	
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**What is this measure and why is it important?**

The process that takes carbon from the atmosphere and stores it in forest ecosystems is termed carbon sequestration. The calculation of average net carbon sequestration rates within the timber supply area allows for a long-term evaluation of effects of management activities and/or natural disturbance on the rate at which the forested landscape is sequestering carbon. Average sequestration rates are based on changes in ecosystem carbon storage over time without accounting for carbon removed in harvested biomass. The rationale is that the carbon in harvested materials will be stored in wood products following harvest. An assessment of the sequestration rate provides a measure of the rate and direction of carbon exchange between the forest ecosystem and the atmosphere.

The interim measure, comprised of the measures listed in the table above, all contribute to carbon sequestration. As they are individually met then the interim measure for carbon sequestration is considered to have been met.

**2006 Condition**

All of the measures that reflect this interim measure met their targets, therefore this interim measure is considered to have met its target. See 3-2.1 for comments on the CFS model. This measure should have the references to the CFS model removed.

**Economic Values – Criterion 4, 5, and 6**

<b>Criterion 4</b>	<b>The flow of economic benefits from forests through the forest industry is sustained</b>
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<b>Indicator 4-1</b>	Timber harvesting continues to contribute to economic well-being
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**Measure 4-1.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-1.1 Total dollar value of the actual timber harvest (amount of harvest related to purchase price of logs based on the MPS system)	TBD	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Knowing the link between the amount of volume harvested (AAC and private wood purchase) and the value of the products derived from the harvest is be a powerful measure of sustainability. However, internal company data on the net value of the harvest and actual payments from customers is proprietary. Another way to value the harvest is to use sales information from BCTS.

**2006 Condition**

The Market Pricing System was implemented April 1, 2006. The average value of the stumpage bid for the BCTS blocks in the Quesnel TSA west of the Fraser River. Note that this value is strictly a value for the timber. It does not include the log sellers/consumers costs of admin, road construction/maintenance, harvesting, hauling, or silviculture.

Suggest the target be identified as 1 report of the average value of the timber harvested with (0) variance. Trends of the measure will be interesting to track but targets for the value of the timber are not suitable due to the high variances of lumber markets that affect the bid values and due to the declining value of the timber in the DFA.

**Table: Value of Timber Harvested**

Year	MPS Average value (\$/m3)	Quota Conifer harvested (m3)	Value of Harvested timber (\$)
2004	NA	619,448	NA
2005	NA	845,741	NA
2006	21.57	715,085	15,424,383

**Measure 4-1.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-1.2 Timber supply certainty – AAC	Report Canfor AAC within the DFA	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Timber supply certainty is important to the community (workers and local government), the corporation and the province as a whole. It is a component in investment decision making for corporations and their shareholders. It provides governments the ability to track revenue and to set budgets.

The long term harvest level is the AAC that can be sustained over a long period of time for the DFA given the specified management requirements for other forest resources. As harvesting interacts and potentially affects many of the other measures identified in this SFM Plan over long periods of time, understanding the outcomes of harvest levels are important economically as well as socially and ecologically.

**2006 Condition**

The measure is considered to be met by the table below. The table identifies the AAC for the Canfor Forest Licenses harvesting timber within the DFA.

**Table: Annual Allowable Cut of Canfor Forest Licenses (m3)**

	<b>replaceable</b>	<b>non replaceable</b>				
<b>Year</b>	<b>A20011</b> replaceable	<b>A57712</b> PFT	<b>A67546</b> Salvage	<b>A75167</b> Salvage	<b>A59411</b> Salvage	<b>Total</b>
<b>2004</b>	382,194	120,000	140,000	NA	NA	<b>642,194</b>
<b>2005</b>	382,194	Ceased	140,000	25,000	NA	<b>547,194</b>
<b>2006</b>	382,194	Traded	140,000	25,000	40,000	<b>587,194</b>

The A57712 Poor Forest Type Forest (PFT) License ceased when the Specialty mill was shut down. The license was traded to C&C for the A59411 Salvage forest license Canfor won the bid for the A75167 Salvage License in November 2004.

### Measure 4-1.3

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-1.3 The percentage of harvested area regenerated to target species composition by regeneration delay	100% (-10%)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measures the success in establishing second growth forests in harvested areas with approved target species (also known as preferred and acceptable species). Target species for specific sites have been recommended by the MOF on the basis of a species' productivity, reliability, and silvicultural feasibility. These target species provide the best potential for future timber for those sites.

**2006 Condition**

This measure is related to 2-3.2. The measure is considered to be met when all the block have met regen delay. To meet regen delay the stands have been surveyed to ensure they have sufficient stocking of the target species.

There were no instances where blocks did not meet regen delay in 2006. The target is considered to have been met.

<b>Indicator</b> 4-2	Citizens continue to receive a portion of the benefits.
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### Measure 4-2.1

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
	Full Time Equivalentents (FTEs)	
4-2.1 Employment in FTEs for each forestry sub-sector (defined below) locally:	Road building, harvesting 45 (10)	<input type="checkbox"/> Met
	Hauling 35 (10)	<input type="checkbox"/> Pending
	Silviculture 25 (10)	<input checked="" type="checkbox"/> Not Met
	Planning 1.5 (0.5)	
	Layout cruising 5 (2)	

**What is this measure and why is it important?**

The economic health and stability of a community is largely dependent on steady employment for area residents. Forestry activities can be broken down by sub-sector as:

**2006 Condition**

Excepting the hauling target, the FTEs for 2006 have met the targets (2004 baseline). The rate used to calculate the harvesting FTEs was adjusted to show more productivity per person. This shows as a reduction in FTEs from 2005.

As noted in 2005 it is considered that method used to define the 2004 hauling FTEs overestimated them. The 2004 FTEs were reviewed with the method devised for calculating the FTEs in 2005. The results suggest that the 2004 FTEs for hauling and silviculture were overestimated. The revised results for the 2004 values will be reviewed with the group and proposed for use as the baseline numbers.

The current targets identify this measure as not being within the variance for the hauling value. So for this report the measure was not met.

**Table: Canfor Quesnel Full Time Equivalents (FTE) by Sub-sector, 2004<sup>4</sup>**

Sub-sector	2004 Rev2007	2004	2005	2006
Road Building/Harvesting	51.6	49	70.5	52.2
Hauling	19.7	40.5	26.9	22.7
Silviculture	24.3	30	17.9	20.3
Planning & FIA	2.1	1.8	3.4	1.4
Layout/cruising	5.9	6.6	4.3	4.5
<b>Total</b>	<b>103.6</b>	<b>127.9</b>	<b>123</b>	<b>101.3</b>

## Measure 4-2.2

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-2.2 Indirect/Induced employment and income estimates	1 py/1000m3 (0.2)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

### What is this measure and why is it important?

Induced employment is all employment generated providing goods and services to the forest sector, its employees and contractors. Measuring the amount of employment generated by related companies/individuals is an indicator of the economic impact of the forest industry in the DFA. It is also a measure that can be used to determine the resilience of the local economy.

### 2006 Condition

The Indirect/Induced employment and income estimate is set when Timber Supply Review (TSR) is conducted by the Chief Forester. TSR 2 estimated that the total provincial indirect and induced employment has a coefficient of 0.959 person years of employment per 1000m3 harvested. This coefficient multiplied by the Canfor quota wood harvested from the DFA is identified below. The coefficient will be updated in future TSRs.

<sup>4</sup> Personal communication from Canfor Quesnel, August 2005.

**Table: Estimate of indirect employment generated by Canfor forestry activities in the DFA**

Year	Volume from DFA	Estimated indirect person years generated
2004	619,448	594
2005	845,741	811
2006	715,085	686

**Measure 4-2.3**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-2.3 Percentage of dollars spent locally on each forestry sub-sector in proportion to total expenditures: <ul style="list-style-type: none"> <li>• Road building/Harvesting</li> <li>• Hauling</li> <li>• Silviculture</li> <li>• Planning supervision and layout/cruising</li> <li>• Other (includes stumpage and scaling)</li> </ul>	Percentage of \$ spent 40 (10) 17 (7) 8 (4) 9 (3) 26 (10)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measures the degree to which expenditures in forestry-related activities support the local economy. It would be an important measure to community leaders and public advisory groups. The development of a strong local economy promotes strong labor markets, educational opportunities and amenities to attract highly qualified individuals to the forest sector. Therefore, it contributes directly to the long run sustainability of the enterprise.

**2006 Condition**

2006 percentages of dollars spent by subsector were within the target variances therefore the target is considered to have been met. Stumpage was increased following the change in pricing systems as of April 1, 2006.

**Table: Percent of dollars spent by forestry subsector**

Sub-sector	2004	2005	2006
Road Building / Harvesting	40	47	42
Hauling	17	21	19
Silviculture	8	6	7
Planning/supervision and layout	9	7	6
Other (includes stumpage and scaling)	26	20	26
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Measure 4-2.4**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-2.4 The number of contracts and volume of timber purchased from private local sources.	Number of contracts and m3 of local purchase by source category (BCTS, Woodlots, Private) use 2004 data as baseline	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

The intent of the measure is to demonstrate that smaller timber sellers still have the opportunity to sell to large companies. This measure complements the other measures for this indicator and can also be used to test the diversity and resilience of the local economy. Local is defined as persons or businesses that have mailing addresses located in the TSA.

The yearly fluctuation of purchases makes a number or volume target difficult to forecast or meet. Therefore target is the following table updated annually which identifies the number of contracts and volumes log purchases, broken down by sector. This demonstrates that Canfor maintains an opportunity for smaller timber sellers to sell their wood by the number of log purchase contracts with local woodlots and/or private land owners.

**2006 Condition**

In 2006 locally purchased volume from woodlots and private sources comprised 17 contracts and 64,324m3 (14% of the locally purchased volume). Previous years had 45 contracts with 119,734m3 (23%) in 2005 of the volume of logs purchased. This compares to 136,553m3 (32%) of the logs purchased in 2004.

The data shows that smaller timber sellers had the opportunity to sell wood to Canfor in 2006. The lowest volume purchased from one seller was two small loads totaling 36m3 (the average quota truckload is over 60m3). The data also shows a trend of reduced local volumes available from woodlots as most local woodlots have harvested their pine components. An opposite trend is shown with BCTS volumes as the BCTS has increased the volumes it lets out for bid. The other component is mostly comprised of purchase from other licensees. This has reduced due to changes in configuration of competitors mills. They have developed lines to cut the pine logs between 6 and 14” in diameter that Canfor-Quesnel uses.

The intent of the measure has been met.

**Table: Volume of Timber Purchased Locally by Canfor.**

Purchased from	2004		2005		2006	
	Number	m3	Number	m3	Number	m3
<b>BCTS</b>	2	11,380	5	128,821	13	197,656
<b>Woodlots</b>	15	131,496	14	77,716	6	27,565
<b>Private land</b>	7	5057	18	42,018	11	36,759
<b>*Other</b>	3	272,199	8	261,595	23	93,075
<b>Total</b>	<b>27</b>	<b>420,132</b>	<b>45</b>	<b>510,150</b>	<b>55</b>	<b>450,791</b>

\* Other includes Forest Licensees, First Nations, logyards etc.

<b>Indicator</b> 4-3	Governments continue to receive a portion of the benefits
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### Measure 4-3.1

<b>Measure:</b>	<b>Target (Variance):</b>	<b>Status of Target</b>
4-3.1 Percentage of fees paid on time by industry to municipal and provincial governments	100% (0%)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### **What is this measure and why is it important?**

The fees paid by the forest industry, including stumpage, local and provincial taxes and other rents are an important component of both local and provincial economies. Understanding what the contribution of the forest industry to the economy is an important aspect of economic sustainability.

#### **2006 Condition**

For 2006 Canfor has paid all the property taxes and water, sewer, and garbage fees to the Quesnel municipality. As well the provincial taxes and fees including timber rent, stumpage, and property taxes were all paid. The target has been met.



<b>Indicator</b> 4-4	Opportunities to share a portion of the benefits exist for local Aboriginals
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**Measure 4-4.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-4.1 Number of documented opportunities for local Aboriginals, residing in the Quesnel TSA, to continue or enter into contracts with Canfor	5 opportunities (2)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure is intended to monitor the impacts of forest industry and government activities on the ability of Aboriginals to access forestry related economic opportunities. At present, this measure is not intended to assess how successful Aboriginals are at taking advantage of the opportunities.

**2006 Condition**

The number of opportunities for local aboriginals to enter into contracts is identified below. These contracts include a renewable harvesting contract, log purchase agreements, and MoUs for management of planning/harvesting.

Canfor-Quesnel has had a long working relationship with the Nazko Band. The success of this relationship led to Canfor being approached in 2005 to consider working with the Kluskus Band. Following discussion an agreement was signed to plan and develop and harvest the Kluskus nonreplaceable Forest Licence (NRFL) in exchange for access to their available volumes. The agreement also provides for opportunities for the Band to develop infrastructure and potential employment for Band members. One of the main goals of the agreement for the Kluskus Band was to have roaded access to the Kluskus Indian Reserve. Canfor planned and developed 25 km of road to the Reserve in 2006. Note that the Reserve is outside the Canfor-Quesnel DFA.

Following the initial success of the Kluskus project Canfor was approached by the Red Bluff Band to engage in a similar agreement which was signed in January of 2006.

**Table: The number of opportunities for aboriginals to enter into contracts with Canfor-Quesnel**

2004	2005	2006
5	6	6

<b>Indicator</b> 4-5	A competitive, diversified forestry sector exists
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### Measure 4-5.1

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-5.1 A competitive local primary milling facility is sustained	Minimum of 1 (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### What is this measure and why is it important?

The existence of a forest industry primary processing facility can have a stabilizing affect on the economy of a DFA. A primary processing facility attracts other businesses and provides revenue to all level of government. The economic sustainability of many parts of BC, including Quesnel depends in part on a competitive primary processing facility(s).

#### 2006 Condition

Canfor maintained 1 competitive milling facility in Quesnel in 2006. The mill continues to be one of Canfor's top performing facilities. The target has been met.

<b>Indicator</b> 4-6	Levels of forest damaging events or agents are managed such that their economic impact is minimized
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### Measure 4-6.1

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-6.1 Assessments of damaging events or agents (current status; risk potential)	1 assessment per damaging event or agent (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

#### What is this measure and why is it important?

Insect and disease disturbances have the potential to cause significant economic, social and ecological impacts. The economic impacts can be measured in terms of volume losses. These are often referred to unsalvaged losses for disturbances, which lead to mortality, but incremental losses may also occur due to a variety of insects and diseases. Attempts are made to capture unsalvaged losses in Timber Supply Reviews, but often insufficient background material is available to accurately define these losses. Adaptive management, coupled with hazard rating,

will provide information required for future modeling endeavours designed to provide estimates of gains or losses associated with various management scenarios.

**2006 Condition**

Assessments of insect and diseases in the DFA are identified in the table below. The main change from 2005 is that Mountain Pine beetle is becoming a pest of older plantations.

The target has been met.

**Table: Ranking of Pest Species by Potential Impact on Forest Management Activities.**

Pests	Status	Ranking of Significance
<b>Mature Forest Pests</b>		
Mountain pine beetle	Epidemic continuing to damage mature and now immature stands	High
<b>Plantation Pests</b>		
Root collar weevil	Small pockets of plantations being killed by this beetle.	Low
Blister Rusts	Portions of plantations in high risk areas are being killed by this pathogen.	Medium
Mountain Pine beetle	MPB attacked older plantations in 2005 and more so 2006. Some plantations have had significant damage.	High

**Measure 4-6.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
4-6.2 Management strategies in place to reduce the impact of damaging events or agents (including plans, suppression, salvage)	1 management strategy exists per damaging event or agent (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Once assessments of potentially damaging natural disturbance events or agents are in place, this measure ensures that management strategies are put in place to deal with any events or agents. Endemic levels of damaging agents are expected in the DFA. Strategies will be developed for damaging agents that begin to exceed historic endemic levels. These levels will be discussed with the MOF to determine when a strategy is required.

**2006 Condition**

Management strategies for mountain pine beetle and pine rust have been documented. Root collar weevil has not become a significant pest as yet, its occurrence will be monitored during regen surveys.

<b>Criterion 5</b>	<b>The flow of marketed non-timber economic benefits from forests is sustained</b>
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<b>Indicator 5-1</b>	Amount and quality of marketed non-timber forest resources does not decline over the long-term as a result of forest management activities
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**Measure 5-1.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
5-1.1 List of existing and documented potential for marketed non-timber benefits that is annually updated	Maintain the number of items on the list and update annually	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

The measures of this indicator will highlight trends in the marketed non-timber economic benefits from local forests and assist in developing strategies for sustaining these benefits over time, within the limitations of the current forest management activities conducted by Canfor. The goal for Canfor is to not degrade the current or future potential for marketed non-timber benefits as a result of forest management activities and that, where possible, they contribute to improving the potential.

**2006 Condition**

No changes to the list developed for the SFMP.

The following list describes the known marketed non-timber economic activities upon in the DFA:

- 8 Guide outfitters who operate within specific guiding territories.
- Fishpot Lake and Tzenziacut Lake Lodges
- 36 Trapping Tenures
- 25 Range Tenures
- BC High Tech Forestry Tours

**Measure 5-1.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
5-1.2 Number of jobs per non timber forest resource sector listed in 5-1.1	Establish baseline and report on trends over time (what time)	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Once a comprehensive list of the marketed non-timber benefits is available, the SFM Plan can begin tracking the number of jobs created. Understanding the economic impacts of potential trade-offs across forest resource users is an important aspect of economic sustainability. In any trade-off discussion, it should be recognized that some marketed non-timber resource businesses may also have a strong social component.

**2006 Condition**

Working with MoE staff to develop a baseline for 2006. Information for 2006 will be provided with the 2007 report.

**Measure 5-1.3**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
5-1.3 Income per non timber forest resource sector listed in 5-1.1	Establish baseline and report on trends over time (what time)	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure is directly related to 5-1.2 and is meant to measure one aspect of the economic benefit derived from businesses that work with marketed non-timber resources.

**2006 Condition**

Working with MoE staff to develop a baseline for 2006. Information for 2006 will be provided with the 2007 report.

<b>Criterion 6</b>	<b>Forest management contributes to a diversified local economy</b>
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<b>Indicator 6-1</b>	Employment and income sources and their contribution to the local economy continue to be diversified
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**Measure 6-1.1**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
6-1.1 Employment supported by each sector of the local economy (actual and percentage of total employment)	Establish baseline and report on trends over time	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Although the forest industry cannot directly control the diversity of the economy for the community in which it operates, understanding the impact of that diversity is an important component of SFM. If the community is not economically diverse, it will not be resilient to economic shocks. Services could decline and thus skilled workers and their families may move to more stable areas. As an important economic player, Canfor can potentially influence local policies that would encourage economic diversity in their communities.

**2006 Condition**

Readily accessible and useful current information on employment has not been found to be available. Work is continuing to identify potential information sources that could identify economic diversity in the community.

A revised measure is needed to support this indicator or the measure should be dropped.

**Measure 6-1.2**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
6-1.2 Contribution of income sources from each sector of the local economy (actual and percentage of data)	Establish baseline and report on trends over time`	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure is directly related to 6-1.1 and is meant to measure the contribution of income sources as part of the economic benefit derived from each sector of the local economy. This information can be used to analyze the economic diversity for the DFA.

**2006 Condition**

Readily accessible current information on income sources has not been found to be available.

See comments for 6-1.2.

**Social Values – Criterion 7, 8 and 9**

<b>Criterion 7</b>	<b>Decisions guiding forest management on the DFA are informed by and respond to a wide range of social and cultural values</b>
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<b>Indicator 7-1</b>	Forest management planning adequately reflects the interests and issues raised by the public (stakeholders, residents and interested parties) in the DFA through an effective and meaningful (to the group members) Public Advisory Group (PAG)
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**Measure 7-1.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-1.1 Implementation and annual update of a comprehensive stakeholder analysis of affected and interested parties	1 stakeholder database (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

As forest management recognizes a broader range of forest values, particularly on public land, it is increasingly important that all stakeholders have input into management concerns.<sup>5</sup> The public, through a public participation process, has an opportunity to be involved proactively in the management of a DFA. Effective sustainable forest management planning for public land requires appropriate involvement of stakeholders and the general public in the development and implementation of plans.

**2006 Condition**

The List of stakeholders and interested parties was updated in 2006 for the Forest stewardship Plan referral. Target met. The future condition of this measure is to develop a database that is spatially linked to the DFA.

**Measure 7-1.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-1.2 Development and implementation of a communication plan that encourages participation and early input from a range of stakeholder representatives	1 Terms of Reference that includes a communication plan. Review every two years	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Focused involvement of interested parties is fundamental to effective public participation. The public participation process will be as unique as the DFA and the representatives, containing a range of interested parties, their values and needs. For this reason, an effective public participation process needs to accommodate local circumstances, yet remain structured. Establishing and implementing an agreed upon Terms of Reference (TOR) provides for a fair, effective, open and accountable process to exist. Communication and participation with parties outside of a formal public advisory group is required to ensure sustainable forest management input is being received from as wide a range of the public as possible.

**2006 Condition**

The TOR and communication plan were updated in May 2005. Target met.

**Measure 7-1.3**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
7-1.3 The existence of an effective public advisory group	1 Public Advisory Group (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Effective public participation processes accommodate the public’s wide range of knowledge, different interests, and varying levels of involvement with regard to SFM, as well as the public’s differing cultural and economic ties with the forest. Building on the earlier two measures under this indicator, this measure highlights the practical advantages to including the public in the planning process, such as accessing local knowledge and increasing public understanding and support for sustainable forest management. An effective way to receive focused input from the public is to form a public advisory group. Representative members of various interests groups, as identified through the Stakeholder Analysis, will be involved in order to receive wide-ranging knowledge and input.

**2006 Condition**

The North Cariboo Sustainable Forest Advisors met six times in 2006. The group has continued to assist with the development and review of the SFMP measures.



**Measure 7-1.4**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-1.4 The conduct of an open public process (with the NCSFA) prior to approval of Forest Stewardship Plans (FSP)	Minimum of 1 review process per FSP renewal or major amendment (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Public, stakeholder and First Nations input into planning can assist with accessing local knowledge that in turn will result in better management decisions. However, when public, stakeholders and First Nations interests are diverse, and a broadly supported plan is not achieved, decision makers need to weigh the input from a variety of perspectives before deciding on a plan or components of a plan. For this reason, it is important to consider and deliberate concerns brought forward by the NCSFA, as well as other public input processes, prior to making major management decisions.

**2006 Condition**

The North Cariboo Sustainable Forest Advisors reviewed the draft FSP and the proposed FSP in 2006.

**Measure 7-1.5**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-1.5 Group member satisfaction with the PAG process	75% good or very good on NCSFA surveys (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Transparent public processes which enable input from a wide range of stakeholders and interests, and which promote improved and shared understanding of sustainable forest management, can lead to greater public support and potentially more streamlined implementation of the SFM and other forest management plans. It also is a step to ensuring that local values and issues are identified and dealt with by Canfor. This measure is tied to measure 7-1.4 and ensures that the process set up for that measure, the responses and the participant’s satisfaction will be documented.

**2006 Condition**

The North Cariboo Sustainable Forest Advisors responded to four surveys in 2006, April 6<sup>th</sup>, June 8<sup>th</sup>, Sept 28<sup>th</sup> and Dec 7<sup>th</sup> with an overall satisfaction of good or very good at 89%.

The target is considered met.

**Measure 7-1.6**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-1.6 Endorsement of the SFM Plan by the NCSFA	Consensus reached	<input type="checkbox"/> Met <input type="checkbox"/> Pending <input checked="" type="checkbox"/> Not Met

**What is this measure and why is it important?**

The SFM Plan is the adaptation of the various inputs to balancing environmental concerns, community needs and economic values. It provides direction to forest managers in the Canfor Quesnel DFA for implementation of strategies that will achieve sustainable forest management as influenced by the NCSFA. This measure ensures that the Sustainable Forest Management Plan adequately reflects the management of the multiple and sometimes competing, social values that the NCSFA has identified as important. Annual endorsement of the SFM plan demonstrates acceptance that the public input provided by the NCSFA was included and responded to in an appropriate manner.

**2006 Condition**

The North Cariboo Sustainable Forest Advisors last reached consensus and endorsed the SFMP as updated at the Nov 3, 2005 meeting. The NCSFA continued to work on the matrix in 2006 however the activity to endorse the plan was not completed.

To correct this condition for future reports the groups Terms of Reference document was been revised in the April 2007 meeting to schedule review of this measure in the fall meeting of each year.

The measure was not met in 2006.

<b>Indicator</b> 7-2	Information is exchanged between DFA forest resource managers and the public through a varied and collaborative planning approach in order to facilitate capacity building in the community
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**Measure 7-2.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-2.1 The number of effective communications with the public regarding information on the SFM indicators during the development and updates of the SFM Plan	1 PAG, 1 Annual Report, 1 FSP open house per plan renewal, 1 public communication strategy	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

The review of existing indicators and the development and addition of locally relevant indicators of sustainability is an important aspect of the public process. The public advisory group is one component of communicating with the public. Other venues that reach out to the larger community will be developed. Each of these communication opportunities will be tested to ensure they are effective for those participating. This Measure is closely linked with measure 7-2.2, which ensures that there are a number of different communications with the public.

**2006 Condition**

1 PAG –The North Cariboo Sustainable Forest Advisors were active through 2006.  
 Annual report –The SFMP was being developed during 2005, No annual report as yet  
 FSP open house – The FSP was reviewed with the PAG and the Nazko Band in 2006  
 1 public communication strategy – The strategy was developed in 2005  
 This annual report has been prepared for 2006

The Target is considered to be met.

The table below identifies other information communicated to the NCSFA.

**Table: Communication of Information on Key Resource Indicators**

<b>Date</b>	<b>Author or Presenter</b>	<b>Paper or Presentation Notes<sup>6</sup></b>
Jan 19, 2006	Paula Jeakins, consultant	UBC Public Survey
Jan 19, 2006	Victor Hegan, Canfor	Canfor Pest Management Plan
Jan 19, 2006	Steve Day, Canfor	Forecasting Scenarios, project results
Feb 28, 2006	Keith McGregor/Kevin Jewett, Canfor	Canfor-Quesnel
Apr. 6, 2006	John Deal, Canfor	Biodiversity conservation planning
June 5, 2006	Silvagro, Canfor Staff	Quesnel Senior Secondary Field tour
June 8, 2006	Rob Reed, Silvagro	Silvagro nursery, seed genetics
June 8, 2006	Clare Kooistra, Silviculture consultant	Silviculture trials
June 8, 2006	Clive Welham, UBC	Soil Productivity Thresholds
June 8, 2006	Brian Inwood, Roads	Road activities, stream crossings
August 2006	SFM update #1	Conservation of Genetic diversity
Sept 28, 2006	Steve Day, Canfor	Chain of custody PEFC, UBC public survey, FSP
Dec 7, 2006	Greg Saugstad, Canfor	Canfor Quesnel 2007 outlook, harvesting systems
Dec 2006	SFM update #2	Worker and Community Safety

<sup>6</sup> Copies were provided each PAG member either before or after the presentation date. Copies of each can also be found in the Canfor Office.

**Measure 7-2.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-2.2 Demonstration of reciprocal knowledge exchange between local stakeholders and resource managers through satisfaction surveys and responses to comments on the SFM Plan	Increasing trend of satisfaction with surveys of: tours, meetings, school presentations and the public. 1 written response per comment on the SFMP	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Merely undertaking meetings and providing extension on what has been done does not ensure that the communication with local stakeholders has been effective. As part of the development of measure 7-2.1, an approach for measuring whether or not the information provided to the community and stakeholders has resulted in increased knowledge of SFM will have to be developed. An informed public can better deal with potential trade-offs that may arise during the development of the SFM Plan or results of the SFMP Annual Report.

**2006 Condition**

Surveys were developed and used in 2006 for field tours. All the ratings of the June NCSFA and the QSS field tour had a ratings that were good to very good.

**Measure 7-2.3**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-2.3 A website containing relevant SFM information is developed and maintained	SFM portal, Canfor website	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Merely undertaking meetings and providing extension on what has been done does not ensure that the communication with local stakeholders has been effective. One way to provide information to the general public is through the Internet with a site specific to the SFM initiatives of Canfor. An informed public can better deal with potential trade-offs that may arise during the development of the SFM Plan or results of the SFMP Annual Report.

**2005 Condition**

The SFMPortal was damaged by a hacker in 2006. The continuation or replacement for the SFMPortal has not been determined. The Canfor Website contains updated SFM information for all the company certifications.

The Target is considered met

**Measure 7-2.4**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-2.4 The percentage of timely responses to Public inquiries	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Members of the public deserve a timely response to requests for information on forest management issue conducted by Canfor. Canfor operates on public land and has a responsibility to respond to legitimate public inquiries in a timely manner.

**2006 Condition**

Requests for information from the public in 2006 were in regard to FDP amendments and the proposed FSP . The requests for information were responded to through use of letters, email, maps, and field reviews.

A visitor Don Ha Choi, Korean forest research institute, asked for SFM information and was directed to the Canfor website.

The Target is considered met

<b>Indicator</b> 7-3	An adaptive management program is implemented for all levels of the Framework (Strategic, Tactical, Operational)
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**Measure 7-3.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-3.1 Adaptive Management strategy is developed, documented and acted upon	1 Strategy reviewed annually	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Adaptive management (AM) is the process by which a commitment is made to adjust management strategies to better cope with change while seeking a better understanding of how management goals can be achieved. An adaptive management approach recognizes change as a constant factor. Therefore it is necessary to understand the root causes of what has, and may be changing. To do so requires learning about the economic, social and ecological systems that are constantly moving through a cycle that is changing and reconfiguring in response to human attempts to manage them.

**2006 Condition**

An SFM adaptive management strategy has been documented. It includes the monitoring, analysis and reporting strategies articulated throughout the SFM Plan. The components of the plan include the SFMP, the SFMP annual report, the Forest Management System (FMS), Audits, the SFMP Knowledge Gap matrix, the Canfor-Quesnel Environmental Program, and the FMS management review.

The Target is considered met

**Measure 7-3.2**

<b>Measure:</b>	<b>Target (Variance):</b>	<b>Status of Target</b>
7-3.2 Monitoring plans for indicators as identified in the SFM Plan	1 plan reviewed annually (0)	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

As local public advisory groups select indicators and measures of sustainability, credible and cost effective monitoring plans for each are developed. The information gathered during monitoring is used in modeling/forecasting and assists in the development of management scenarios. The monitoring data also allows managers to determine if their management activities are effectively achieving the targets set out in the SFM plan, SRMP, FSP, etc.

The plan summary will include the following parameters:

Measure	Threshold / Targets	Measurement Unit	Spatial/Geographic Scale	Frequency of collection	Data source	Knowledge gaps	Cost
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**2006 Condition**

The annual report template has served as the initial monitoring plan for the SFMplan. An action tracking has been to complete this measure.

The Target is considered pending

**Measure 7-3.3**

<b>Measure:</b>	<b>Target (Variance):</b>	<b>Status of Target</b>
7-3.3 Forecasting plans for indicators as identified in the SFM Plan	1 summary plan (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Forecasting is a component of the adaptive management process. It is necessary for the evaluation and identification of SFM scenarios and forest practices that will achieve the desired future forest condition (i.e. targets). Forecasting is an explicit statement of the expected future condition, through time, of an indicator or measure and will be used in this SFM Plan to predict forest conditions within the DFA based on a locally defined set of assumptions. Projections will be used to compare measures and sustainability targets over time with use of current and best management practices in order to assess the level of risk for each indicator or measure.

**2006 Condition**

In 2005 a forecasting plan for indicators was developed and analyzed with the NCSFA and Forest Ecosystem Solutions. A number of measures that could be analyzed using GIS technology were forecasted with a number of scenarios. See *Scenario Design and Indicator/Measure Forecasting for the Quesnel Defined Forest Area*.

For some measure forecasting is not easily applied. However it was suggested that some measures could be forecasted using what if scenarios. Discussion regarding the forecasting of these measures was undertaken in 2006 however the group was not able to identify scenarios that provided value for those measures.

It is considered that the 2005 FES report and the SFMP measure summaries provide the forecasting summary requirement. The measure is considered met.

**Measure 7-3.4**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
7-3.4 Information Management system is in place to track inputs into the SFM Plan	1 plan reviewed annually (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Resource managers have been collecting data for decades on a variety of resource attributes. In the past, most of the data was collected, as part of the business cycle and information was stored in a rudimentary fashion. Recently, advances in computer hardware and software have allowed for the storage, retrieval and analysis of large data sets. A robust information management system is required to input a variety of economic, ecological and social data sources. The information management system is comprised of the systems in place at Canfor. Analysis may be undertaken through other software packages, but will be based upon the information stored in Canfor’s system.

**2006 Condition**

Previously Canfor-Quesnel managed forestry information with several applications including Phoenix, Microstation, excel spreadsheets and Access databases. Consultant systems were used for more complex data analysis. These applications were single-use platforms that required multiple data entry and manual upkeep of information, but did not provide linkages between the spatially maintained data and the attributes of that data.

In 2006 Canfor-Quesnel hired a Woodlands Information Management analyst and started to implement a Genus woodlands information management system that is linked to ARC software. Upon completion Canfor-Quesnel will be able to more readily input, monitor, and access SFM information. Genus and the loading of the spatial information is expected to be fully implemented in 2007.

The measure is considered met.

**Measure 7-3.5**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-3.5 Reports and analysis of monitoring information	1 (0) Annual Report	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Analysis of the results of status and trend monitoring is an important aspect of adaptive management. It is a component of accountability and allows the public to see how progress is being made in implementing resource management strategies. Analysis of monitoring data will be reported to area resource managers and the public so that changes to the SFM Plan, to practices or to measures can be evaluated. The SFMP Annual Report will provide the reports and discussion on analysis of the measures. The development and use of the SFMP Annual Report will assist with the improving of the measures and improving with SFM in an ongoing basis.

**2006 Condition**

This report captures the information for developed measures in 2006.

This measure is considered met

**Measure 7-3.6**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
7-3.6 Communication of monitoring data on Criteria and indicators beyond the DFA	1 table annually documenting SFM related meetings with licenses, government agencies and stakeholders	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Communication of monitoring data is an important aspect of sustainable forest management. It is a component of accountability and allows the public to see how progress is being made in implementing resource management strategies. Analysis of monitoring data will be reported to the public, government agencies and other licensees so that changes to the SFM Plan, to practices or to measures can be evaluated.



**2006 Condition**

The table identifying SFM related communications with other resource managers is shown below.

This measure is considered met

**Table: SFM Related Communications with to Other Resource Managers**

<b>Date 2006</b>	<b>Author or Presenter</b>	<b>Paper or Presentation Notes</b>
Jan 10, Apr 11 Dec 4	Sustainable Forest Group	Meeting with other Canfor Planners to discuss development of indicators and measures at various divisions
Monthly meetings	Cariboo Chilcotin Licensee Landuse Subcommittee	Planning regarding CCLUP and MPB and joint response to government initiatives
May	Canfor Planning and Certification Forester	FMS review with Canfor Contractor Supervisors
Audits Mar 27, Jun 6	Steve Day	Assisted with the FMS internal audits in Prince George and Vavenby
Sept 11-13	Canfor-Chetwynd Staff	Assisted the Quesnel internal Audit
Aug. 10, 2005	Baker Creek Watershed group	Meetings with MoF, MoE and Licensees to discuss the effects on hydrology from Mountain Pine Beetle mortality and salvage harvesting.
Mar 27, Jun6	Quesnel Strategic Analysis Group	To identify and develop information and tools for mitigating the midterm falldown
Feb 6, 28, Mar 27, May 26, Aug 14	Conservation Legacy group	Meetings with MoF, MoE and Licensees to discuss increased retention in large salvage pine blocks
Apr 27	Quesnel Forest Investment Account Group	Meetings with other licensees to work towards identifying FIA projects for the Quesnel TSA.
2006	Jason Neumeyer, Canfor	Director for the Gavin Lake Forest Education Society. Grade 5 and 6 students are provided camp programs that broaden their understanding of the forests
Sep 13	Bob Simpson, MLA	Discussion on professional foresters, forestry, and Waste and Residue
Nov 15	SARCO	Review of proposed caribou Strategy for BC
Dec 18	FN/FSP workshop	Discussion on the role of, and referral to, First nations in regards to FSPs

<b>Criterion 8</b>	<b>Forest management sustains or enhances the cultural (material and economic), health (physical and spiritual) and capacity benefits that Aboriginals derive from forest resources</b>
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<b>Indicator 8-1</b>	Forest management recognizes and respects Aboriginal and treaty rights
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**Measure 8-1.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
8-1.1 Percentage conformance to legally established treaty rights and customary use rights established through written documents.	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Documentation is important in order to track trends and ensure the target is being met. This measure ensures that a mechanism has been established and that there is documentation associated with procedures to resolve disputes.

**2005 Condition**

Currently there are no legally established treaties or customary use rights in the DFA.  
The target is considered met.

<b>Indicator 8-2</b>	Local management is effective in maintaining and enabling access to resources for First Nations
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**Measure 8-2.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
8-2.1 First Nations identify important resources	Trend upwards	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Forest management strategies and practices can impact resource attributes important to First Nations. Participation by Canfor in the implementation of treaty and use rights strategy ensures that forest management strategies are maintaining access to resource attributes important to First

Nations. This measure assumes that either First Nations identify treaty and use rights strategies or that they can be predicted and accommodated through planning efforts. Opportunities to participate must be set up by First Nations.

**2006 Condition**

First Nations were invited to share information during the FSP referral process. All stakeholders were sent letters prior to development of the FSP, and again upon referral of the FSP. Presentations of the FSP were made to three First Nation Bands. No input or information was provide from First Nations.

Although there has been no spatial or planning information provided by First Nation the opportunity has been provided. There is much room for improvement. The target is considered met.

**Measure 8-2.2**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
8-2.2 Success in implementing and monitoring management practices related to maintaining and enabling access to resources for First Nations	Trend upwards in strategies through the Forest Stewardship Plan	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

A Traditional Use Site is any geographically defined site (on land or water) used traditionally by one or more groups of people for some type of activity. These sites may lack the physical evidence of human-made artifacts or structures, yet maintain cultural significance to a living community of people.

This measure is intended to ensure that management of forests should provide and improve access to resources for survival and maintenance of traditional values and heritage.

**2006 Condition**

Results and strategies regarding Cultural heritage resources were proposed in the FSP drafted in 2006.

Although there is much room for improvement the target is considered met.

<b>Indicator</b> 8-3	The relationship between forest management and First Nations culture is acknowledged and respected as important
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**Measure 8-3.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
8-3.1 Forest management plans demonstrate consideration and accommodation of known First Nations cultural issues.	Trend upwards by protecting/or enhancing culturally sensitive areas/features. (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure contributes to respecting the social, cultural and spiritual needs of local First Nations who have traditionally, and who currently use the forest resource within the DFA for the maintenance of the traditional aspects of their lifestyle. Working with local First Nations to identify, define and develop management strategies that encompass traditional values and uses is an important component of the forest industry's SFM initiative.

**2006 Condition**

Work towards this measure has not been effective from a planning and referral perspective. This is partly due to lack of resources available to First nations to follow up on the many referrals and that First Nations have other interests that are more important to them as this time.

More progress has been made towards this measure with the business relationships described in 4-4.1. To date no culturally sensitive areas have been identified to Canfor

Although the current status is zero the target is considered met for 2006.

<b>Indicator</b> 8-4	Reciprocal knowledge pertaining to forest use as well as forest management plans is exchanged prior to government approval and implementation
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**Measure 8-4.1**

<u>Measure:</u>	<u>Target (Variance)</u>	<u>Status of Target</u>
8-4.1 Accessibility of plans, maps and/or visual simulations showing baseline cultural uses of local forest resources, recognizing First Nations' concern for privacy for specific features.	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

First Nations have Traditional Use Studies in their Traditional Areas. In some cases, this information is considered confidential by First Nations. In order to accommodate other measures under this Criterion, Canfor will need some level of access to these plans. While Canfor cannot control whether access is made available, it is important to ensure that they access information when it is made available and that they respect First Nations' concern for privacy.

**2006 Condition**

The referral process for the FSP provided opportunity for First Nations to be presented information. Presentations were provided to First Nation Bands that requested them. Three Bands were presented The Canfor-Kluskus-Red Bluff FSP. The FSP and FSP maps were provided to First Nation Bands

Canfor will continue to provide information to First Nations as required by legislation, and as requested by First Nations.

Although there is room for improvement the target is considered met.

**Measure 8-4.2**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
8-4.2 Accessibility of current plans, maps and/or visual simulations that outline logging details such as cutting areas, road construction, and include temporal aspects made available for First Nations.	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Canfor develops plans, maps and/or visual simulations that outline logging details such as cutting areas, road construction, and other management strategies. In order for First Nations to effectively provide input into any potential interactions between their identified uses and forest management, all relevant material must be made accessible to First Nations. In order to accommodate other measures under this Criterion, First Nations will need some level of access to these plans.

**2006 Condition**

Canfor has continued to provide mapped information when the FSP was proposed. Canfor will seek to develop agreements with the First Nations regarding referrals and maps.

The target is considered met.

### Measure 8-4.3

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
8-4.3 Meaningful First Nations participation in forest management plans is enabled through a working relationship	Culturally appropriate opportunities for inclusive participation.  100% compliance with current legal requirements (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure was designed to list and report out on all documented opportunities provided to Aboriginal people to be involved in forest management planning processes, and that cultural needs of First Nations are accommodated. Incorporation of Aboriginal people into the forest planning process is an important aspect of SFM. This measure 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. Including Aboriginal people in planning and communication processes is fundamental to recognizing their unique interests in the forest resource present in the DFA.

**2006 Condition**

Work towards this measure was combined with the business agreements noted in 4-4.1. This approach has been effective in building relations with the First Nation bands and in encouraging First Nation participation in forest management.

The target is considered met.

<b>Criterion 9</b>	<b>Forest management sustains ongoing opportunities for a range of quality of life benefits</b>
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<b>Indicator 9-1</b>	Resources and opportunities for recreation (including quality of experience) are maintained or enhanced
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### Measure 9-1.1

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
9-1.1 Forest area managed primarily for one or more compatible recreation activities (by activity) relative to base line status as identified in the Cariboo-Chilcotin Land Use Plan (CCLUP)	No decline from the baseline (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Forested landscapes provide local communities, area residents and tourists the opportunity for outdoor recreation activities. These activities include summer and winter pursuits both on land and on water. They range from hiking, camping, hunting, trail riding, wildlife viewing, fishing, canoeing, jet boating to cross country skiing and snowmobiling. The activities rely on one or a number of combinations of the following: a remote wilderness experience, undisturbed setting, scenic areas, and access to fish, wildlife, and water.

**2006 Condition**

No change to Areas identified in the SFMP.

The target is considered met.

**Measure 9-1.2**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
9-1.2 Access, in accordance with approved access management plans is maintained for recreational use.	No decline from baseline (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Motorized access is one of the most important influences on recreation and recreation opportunities. Recreation activities are as varied as the type of access required to get to the desired area. ROS (Recreation Opportunity Spectrum) delineation criteria include remoteness, the type of roads, volume on roads, and patterns on roads in its classification system for recreation (measure 9-1.3). Many outdoor recreation activities require the user to drive, access the desired area.

**2006 Condition**

Currently there are no approved access management plans in the DFA.

The target is considered met.

**Measure 9-1.3**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
9-1.3 The balance of primitive, semi-primitive, & developed recreation opportunities as defined in identified strategy documents (CCLUP) is maintained, relative to baseline status.	No decline from baseline (0)	<input type="checkbox"/> Met <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Much of the work in describing recreation opportunities was completed under the CCLUP process. The CCLUP defined areas within the DFA that would fall into the above categories.

This measure quantifies and assures that all types of recreation opportunities are available within the DFA. The NCSFA has determined that providing for a balance of these opportunities will allow for a balance of associated quality of experience.

**2006 Condition**

The Recreation Opportunity Spectrum Completed in the early 1990s requires updating.

The target will be considered pending until new information can be developed. Given the ecological and economic concerns created by the Mountain Pine Beetle this measure is not considered a priority.

<b>Indicator</b> 9-2	Visual quality of harvested/managed landscape is acceptable to a broad range of residents, stakeholders and visitors
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**Measure 9-2.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
9-2.1 Forest management compliance with approved Visual Quality Objectives (VQO's) established by the BC Ministry of Forests for the area	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Areas with scenic attributes are more likely to entice travelers to stop and explore the area, thereby generating tourism revenues. Many travelers are interested in outdoor activities experienced along the way, including stops for hiking, fishing, camping and general sightseeing of scenic and historic areas.

**2006 Condition**

No areas were harvested in areas with VQO's in 2006.

This measure is considered met.

**Measure 9-2.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
9-2.2 Compliance with visual objectives set in the CCLUP	100% (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met



**What is this measure and why is it important?**

In addition to the VQO set by the Ministry of Forests, the CCLUP process provided Visual Quality Classes (VQC) with regard to visuals. This measure ensures that the SFM Plan builds on the desires of visual values established during this process. This measure requires that future management activities incorporate these comments for the identified areas. This ensures that those values can be enjoyed by future generations.

**2006 Condition**

The 383 blocks 1 and 2 were harvested in a Partial Retention VQC area near Tzenzaicut Lake. Only the upper western portion of 382-2 can be seen. The closest viewing is 3.5 km. This small opening in the large landscape is in conformance with the Partial Retention visual quality class.

The measure is considered met

<b>Indicator</b> 9-3	Forest management conserves unique or significant places and features of social, cultural, spiritual importance (including protected areas) at the landscape and site level
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**Measure 9-3.1**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
9-3.1 Identification of unique places, significant places, features and/or protected areas	100% of identified sites will be tracked (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

In order to manage values for, or to ensure measures are in place to mitigate any potential damage of sites such as unique or significant places and features and protected areas, a manager must be able to identify, locate and track these values on the land base. There are provincial guidelines in place to protect such sites, once identified. This measure is to ensure that sites and features are identified and tracked.

**2006 Condition**

The list below for the unique and significant places, features and protected areas had the West Road site added. This site was noticed when the FSP information was being collected.

The measure is considered met

**Table: Parks & Protected Areas within the Canfor Quesnel DFA**

<b>Park &amp; Protected Area</b>	<b>Area (ha)</b>	<b>Maintaining Agency</b>	<b>Activity Type</b>
Kluskoil Lake	15,548	BC Parks	Hiking, riding, motorized riding

**Table: Recreation Sites within the Canfor Quesnel DFA**

MOF Recreation Sites	Maintaining Agency	Activity Type
Fishpot Lake South	Ministry of Forests	Camping, fishing
Tzenziacut Lake	Ministry of Forests	Camping, fishing
Honolulu Site	Ministry of Forests	Camping, hiking
Snaking River	Ministry of Forests	Camping
West Road	Ministry of Forests	Camping, fishing

**Table: Recreation Trails within the Canfor Quesnel DFA**

Trails	Maintaining Agency	Activity Type
Collins Overland Telegraph trail	None	Hiking, horseback riding
Crater Lake Trail	Ministry of Forests	Hiking, viewing

### Measure 9-3.2

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
9-3.2 Management strategies for existing and newly discovered unique or significant places, features and protected areas will have a documented description of their degree of protection.	100% conformance (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure builds on measure 9-3.1 by requiring forest managers to track newly discovered unique or significant places and features and protected areas.

**2005 Condition**

New unique or significant places and features and protected areas discovered within the DFA are currently noted and a strategy developed and incorporated into operational plans to protect the unique area. Local government agencies are consulted as required.

Existing areas identified in the FSP have management strategies developed by government agencies. The FSP commits to following these strategies.

No significant newly discovered areas were identified in 2006. The target is considered met in 2006.

<b>Indicator</b> 9-4	Worker and community safety is maintained within acceptable levels
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**Measure 9-4.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
9-4.1 Number of Canfor related safety incidences occurring in the DFA related to forest management strategies (i.e. not related to machinery or human error)	Declining trend to zero	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Forest related safety incidences for this measure are those specific to Canfor. Health and safety of forest workers is a primary quality of life objective. Canfor considers employee safety as a primary focus of all forestry related operations. This measure is meant to evaluate the impact of forest management strategies in relation to safety incidences, particularly for workers. Some forest management strategies that will result from Canfor’s attempt to balance values may require different strategies or practices to occur on the ground. Until these practices become tested, refined and proven effective and safe, it is important to have a measure such as this to gauge the effectiveness of these practices in promoting worker and community safety. The measure is intended to promote forest management strategies that result in safe conditions for workers and communities.

**2006 Condition**

No safety incidences occurred in the DFA related to forest management strategies in 2006.

The measure is considered met.

**Measure 9-4.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
9-4.2 Observance of recognized safety standards in forest engineering (roads and bridges and layout) and operations.	# of incidents where Recognized Safety Standards were not followed. Trend to zero	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Health and safety of forest workers and members of the public is a primary quality of life objective. Canfor considers employee and public safety as a primary focus of all forestry related operations. This measure was developed to track conformance of observance or implementation of recognized safety standards in forest engineering and forest management operations.

**2006 Condition**

No safety incidences occurred where recognized safety standards were not followed in 2006.

The measure is considered met.

**Measure 9-4.3**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
9-4.3 Written Canfor related safety policies in place, are being implemented and are effective	100% compliance (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

Written policies ensure workers have proper training and guidance prior to commencing work. SOPs and safety policies have interviews/checks at some stage to confirm effectiveness.

**2006 Condition**

Written safety policies were revised and implemented in 2006 to conform with the large employer standard of the BC Forest Safety Council. The safety program will be audited in 2007. No safety incidences occurred where recognized safety standards were not followed 2005.

The measure is considered met.

**Measure 9-4.4**

<b><u>Measure:</u></b>	<b><u>Target (Variance):</u></b>	<b><u>Status of Target</u></b>
9-4.4 Safety occurrence summary exists	1 summary annually (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

This measure is important because it provides a synopsis of safety activity so that unsafe situations can quickly be addressed and corrected.

**2005 Condition**

Nine documented safety incident involving Canfor woodlands and Canfor contractors in 2006. Four of which involved staff and five involved contractors.

The summary of the incidents are as follows.

2 slips and falls.

1 trucking incident on highway.

1 logging equipment tip over.

1 animal collision.

1 mill tour incident.

1 trucking incident on a Canfor road permit.

The measure is considered met.

<b>Indicator</b> 9-5	Quality of life benefits sustained or improved through donations to community/groups
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**Measure 9-5.1**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
9-5.1 Policy for donations is in place	1 corporate policy (0)	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

A transparent public processes which enables Canfor to assist community groups and organizations to share in the benefits of sustainable forest management. This will also help ensure that Canfor supports local values and issues identified as being important to the community in a meaningful manner. Written policies ensure that a transparent process exists for guidance to ensure a fair distribution of donations.

**2006 Condition**

A corporate policy is kept on the Canfor intranet.

The measure is considered met.

**Measure 9-5.2**

<u>Measure:</u>	<u>Target (Variance):</u>	<u>Status of Target</u>
9-5.2 List of Donations	1 list of communities/groups receiving Corporate and/or Divisional donations	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Pending <input type="checkbox"/> Not Met

**What is this measure and why is it important?**

A transparent public process which, enables Canfor to assist community groups and organizations to share in the benefits of sustainable forest management. The development and maintenance of a list of all recipients receiving donations from Canfor will also help ensure that donations are being fairly distributed to a variety of community causes. A list that is maintained will help ensure that a transparent process exists for a fair distribution of donations.

**2006 Condition**

A list of donations is shown below. Canfor – Quesnel made 21 donations to local organizations in 2006.

The measure is considered met.

**Table: local organizations that received donations from Canfor-Quesnel in 2006.**

April	Quesnel Lacrosse Association  Community Foundation Merchandise Quesnel Community Living Ass  QSS Woodworking Class  Big Brothers/Sisters Tree planting
May	Billy Barker Days Festival
June	U16 Girls Quesnel Strikers  Quesnel Logger Sports Bowl for Kids Sake 2006 Big Brothers/Sisters West Quesnel Country Fair The Yellow Ribbon Suicide Prevention Program  BC High Tech Forestry Tours
October	Quesnel Children's Concert Quesnel Live Arts Quesnel Ringette Association

December	Quesnel & District Minor Hockey Association  Christmas Dinner Fund Quesnel Festival of the Performing Arts Quesnel Good Cheer Quesnel Youth Curling
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2 – \$800 Bursaries- local high schools

A Corporate donation were made to the Quesnel Soccer facility in 2005.

## APPENDIX