



2005
ANNUAL PERFORMANCE
MONITORING REPORT

Grande Prairie Alberta Operations

REPORTING PERIOD:

January 1st, 2005 - December 31st, 2005

February 28th, 2006



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Prepared By:

A handwritten signature in black ink, appearing to read "Jill Ashley".

Jill Ashley, RPF
Forestry Supervisor, Alberta Operations

Approved By:

A handwritten signature in black ink, appearing to read "James Stephenson".

James Stephenson, RPF
Woodlands Manager, Alberta Operations

Executive Summary

This Annual Performance Monitoring Report has been prepared in accordance with the CSA-Z809-96 standard. It summarizes the progress and performance that Canfor Grande Prairie Alberta Operations has achieved in meeting and maintaining the Sustainable Forest Management (SFM) standard requirements.

In addition to the CSA standard requirements, Canfor corporately has also defined SFM commitments to which each operation must adhere. These include the *Environment Policy* and *Canfor's Forestry Principles*.

Canfor Grande Prairie's Forest Management Advisory Committee (FMAC) has assisted Canfor to identify the local level values, goals, indicators and objectives that are contained within this report. The Sustainable Forest Management Plan (SFMP) was written as a compilation of CSA standard requirements, corporate commitments and local level values, goals, indicators and objectives. To solidify Canfor's commitment to SFM, the SFMP (approved June 2000) was incorporated in the Detailed Forest Management Plan (DFMP) required under the terms of Forest Management Agreement (FMA) 9900037 (Province of Alberta Order in Council 198/99). The DFMP was reviewed and approved by the FMAC, then submitted to and approved by the Alberta government on November 3rd, 2003.

Grande Prairie operations maintained overall conformance to the SFM requirements of the CSA Z809-96 standard and Canfor commitments in 2005. Canfor was successfully recertified to both CSA-Z809-02 and ISO 14001:2004 On November 7th, 2005. This is the final year that the 2000 SFMP (certified to CSA Z809-96) and its objectives, will be reported on. The next annual report will report on the 2005 SFMP (certified to CSA Z809-02) and its targets.

In 2005, public concern continued regarding the management of caribou and caribou habitat within the Little Smoky caribou herd range, a portion of which lies within the Canfor FMA area. Canfor Grande Prairie operations responded on February 11th, 2005 by committing to defer timber harvesting and road building activities in the range area of the Little Smoky caribou herd for two years in order to provide sufficient time for the Alberta Government to approve and implement the Alberta Woodland Caribou Recovery Plan (ASRD, 2004).

During the summer of 2005, Mountain Pine Beetle (*Dendroctonus ponderosae*) was discovered in the E10 area near Grande Cache, only 30 kilometers from the southern boundary of the Forest Management Agreement (FMA) area. Alberta Sustainable Resource Development (ASRD) mounted a very impressive campaign to contain this outbreak. Canfor is working on many projects to aid in the monitoring and control of the beetle in Alberta.

Progress toward achievement of individual SFM objectives is described fully within the Annual Performance Monitoring Report. The following is a summary of results:

Number of objectives are complete	10
Number of objectives that meet	55
Number of objectives that do not meet	4
Number of objectives that are in progress	12
Number of objectives not at their scheduled reporting time	10
Total number of objectives	91

Please Note: In the 2004 Annual Performance Monitoring Report Objective (1b) 1.1b.2 was incorrectly reported as meeting when it actually was in progress, and Objective (4a) 1.3a.1 was incorrectly reported as in progress when it actually did meet. Although the progress in the 2004 table is correct the corrections should be noted. Canfor apologizes for the error.

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1. Introduction & Overview

1.1. Certification

Certification of sustainable forestry practices is key to meeting public demands and maintaining market shares. Canadian Forest Products Ltd. (Canfor) Grande Prairie has sought and achieved certification under a variety of respected standards including International Organization for Standardization (ISO) 14001, Canadian Standards Association (CSA) Z809 and ForestCare. See Quick Facts box for details.

As a preparatory step, Canfor corporately developed an Environmental Management System (EMS) to the ISO 14001 standard. The company's EMS provided the platform on which to build the Sustainable Forest Management System (SFMS) to the CSA standard. In 2005, Canfor amalgamated the EMS and SFMS in the Canfor Forest Management System (FMS).

1.2. The CSA Standard

In 1996, six criteria were developed by the Canadian Council of Forest Ministers (CCFM) to address sustainable forest management. The criteria address the key aspects of forest management. See Criteria below:

- Criterion 1: Conservation of Biological Diversity;*
- Criterion 2: Maintenance and Enhancement of Forest Ecosystem Condition and Productivity;*
- Criterion 3: Conservation of Soil and Water Resources;*
- Criterion 4: Forest Ecosystem Contributions to Global Ecological Cycles;*
- Criterion 5: Multiple Benefits to Society; and*
- Criterion 6: Accepting Society's Responsibility for Sustainable Development.*

The CSA process developed a set of critical elements for each of the criteria listed above, numbering twenty-two in total. Under the CSA standard, adoption of the CCFM criteria and elements as a framework for value identification provides vital links between local sustainable forest management and national and provincial-scale forest policy, as well as a strong measure of consistency in identification of local forest values across Canada. This standard, which utilizes a continual improvement approach, requires public participation, practical demonstration of sustainable forest management practices, and management commitment. Through a process of public participation, the CSA performance framework attains local relevance to the critical elements in the form of locally determined values¹, goals², indicators³ and objectives.⁴ Canfor's public advisory group, the Forest Management Advisory Committee (FMAC), assisted Canfor in the development of its Sustainable Forest Management Plan (SFMP) by identifying quantifiable local level values, goals, indicators and objectives of sustainable forest management.

Quick Facts

- 1997** - ForestCare certified
- 1999** - (November) Canfor Grande Prairie's Environmental Management System (EMS) is certified to ISO 14001:1996 standard
- 2000** - (June) Sustainable Forest Management Plan (SFMP) certified to National CSA standard (CSA-Z809-96)
- 2002** - (November) Successful re-certification audit to ISO 14001:1996 and CSA-Z809-96 standards
- 2003** - (August) Successful re-certification audit to the ForestCare standard
- 2005** - (November) Successful re-certification of FMS to ISO 14001:2004, and SFMP to CSA-Z809-02 standards

¹ Values represent a principle, standard or quality considered worthwhile or desirable

² Goals are broad, general statements that describes a desired state or condition related to one or more forest values

³ Indicators are a measurable variable used to report progress toward achievement of a goal

⁴ Objectives are clear, specific statements of expected quantifiable results to be achieved within a defined period of time related to one or more goals

1.3. Sustainable Forest Management (SFM) Policy

Senior Canfor management has endorsed the *Environment Policy* (Figure 1) and *Canfor's Forestry Principles* (Figure 2) that apply to all of the Canfor forestry operations including Grande Prairie.



Figure 1. Canfor's Environment Policy

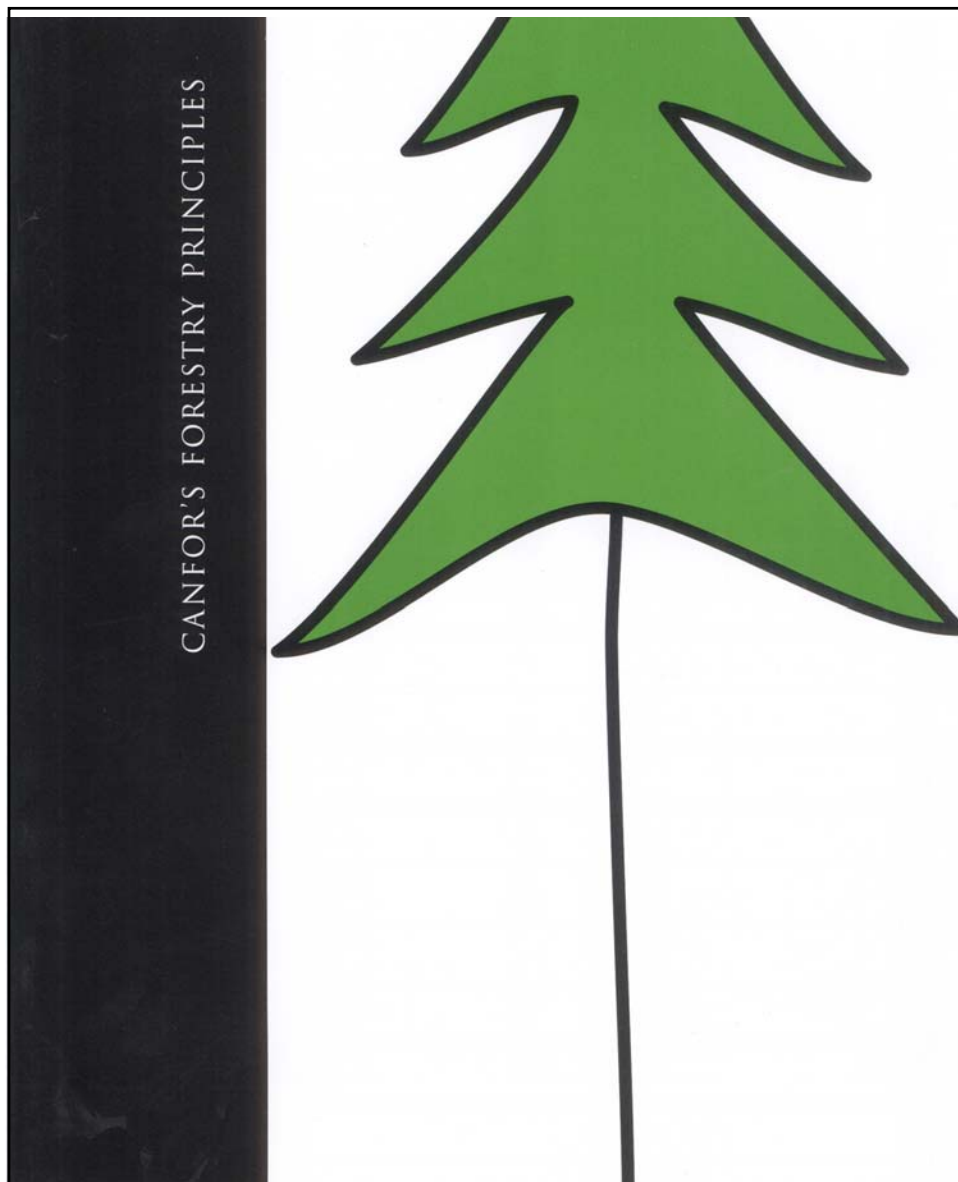


Figure 2. Canfor's Forestry Principles

1.4. The Defined Forest Area (DFA)

The CSA standard states that organizations “*shall designate a clearly defined forest area to which the standard applies.*” The Defined Forest Area (DFA) for Canfor Grande Prairie is the Forest Management Agreement (FMA) area indicated in green in Figure 3.

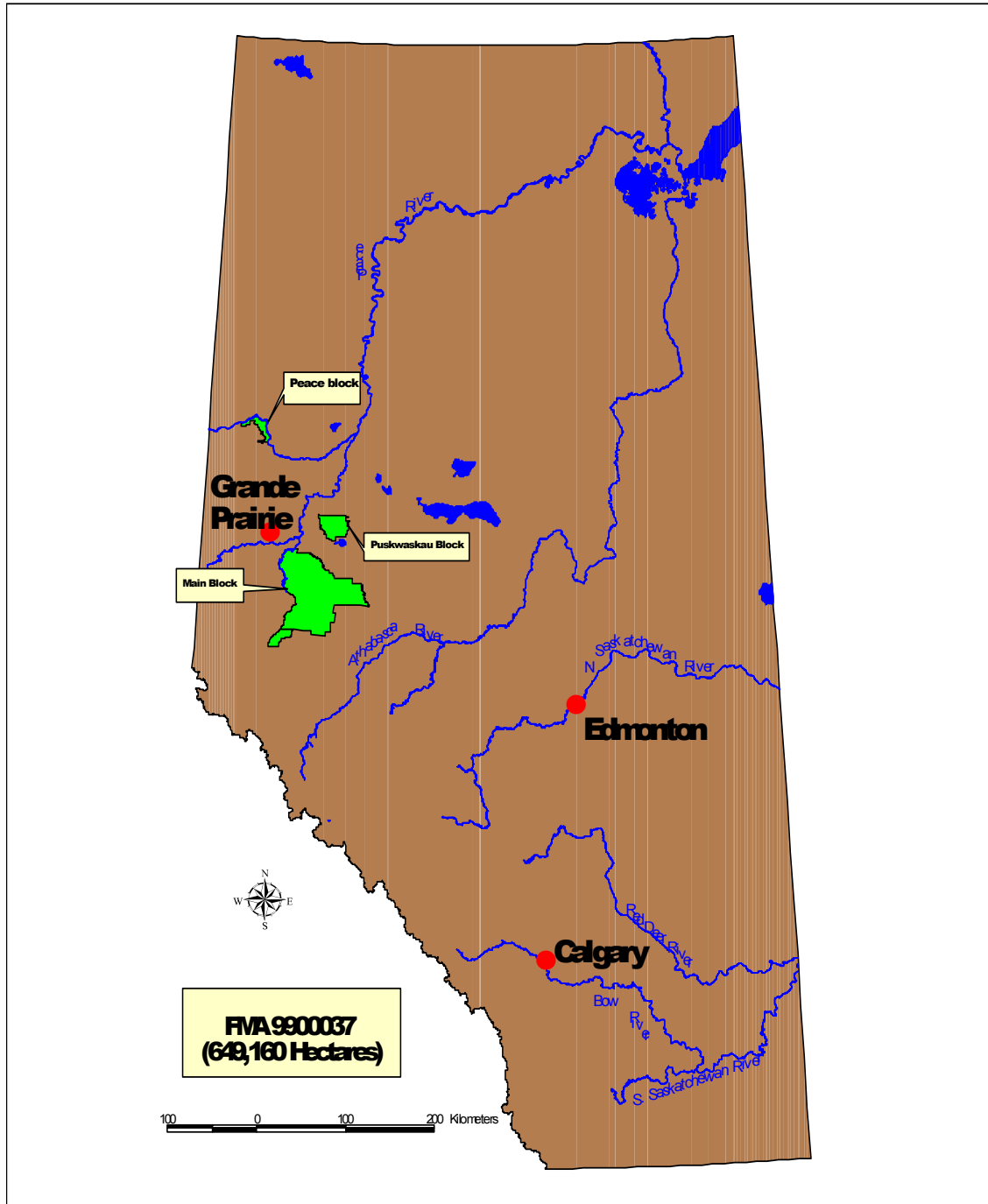


Figure 3. Defined Forest Area (DFA)

1.5. Landbase & Resource Information

Total Landbase: 649,160 ha
 Productive Landbase (Coniferous and Deciduous): 474,193 ha
 Coniferous AAC: 640,000 m³/yr
 Deciduous AAC: 456,712 m³/yr



1.6. Annual Report

In accordance with the CSA standard, Canfor prepares the Annual Performance Monitoring Report to report its progress in meeting commitments in the SFMP. The report contains information on the progress towards meeting and maintaining Sustainable Forest Management (SFM) requirements in general (Section 2) and also indicates the status of each of the 91 objectives (Sections 3-9). Five classifications for each objective are used for reporting the status:

- Completed;
- Meets;
- Does not meet;
- In progress; or
- Not a scheduled reporting time.

2. Progress in Meeting and Maintaining SFM Requirements

In 2005, Canfor corporately amalgamated the former Slocan and Canfor Environmental Management Systems (EMS) and the Sustainable Forest Management System (SFMS) into one system called the Forest Management System (FMS). The FMS was documented in the Forest Management System Manual, which was released in the summer of 2005.

Canfor Grande Prairie maintained overall conformance to the SFM requirements of the Canadian Standards Association (CSA) Z809-96 standard and Canfor corporate commitments in 2005. Results of audits can be found in Section 10.

Public concern has continued regarding the management of caribou and caribou habitat within the Little Smoky caribou herd range, a portion of which lies within the Canfor FMA area. Canfor Grande Prairie operations responded on February 11th, 2005 by committing to defer timber harvesting and road building activities in the range area of the Little Smoky caribou herd for two years in order to provide sufficient time for the Alberta Government to approve and implement the Alberta Woodland Caribou Recovery Plan. Canfor also continued its partnerships with industry, government and other groups to further research, monitoring and modeling initiatives in regards to caribou.

During the summer of 2005, Mountain Pine Beetle (*Dendroctonus ponderosae*) was discovered in the E10 area near Grande Cache, only 30 kilometers from the southern boundary of the FMA area. Alberta Sustainable Resource Development (ASRD) mounted a very impressive campaign to contain this outbreak. Canfor offered resources to this effort and stayed in contact with ASRD to ensure that Canfor's interests were addressed. In December, ASRD asked FMA holders to *"begin discussions on harvest area re-sequencing and re-planning strategies incorporated in the Pine Strategy of the Emergency Response Plan."* Canfor is working with adjacent FMA holders, quota licensees, ASRD and other interested parties to develop a response that balances the need for aggressive action against Mountain Pine Beetle with other values that are being managed.

A significant accomplishment during the past year was the completion of quantifiable local level values, objectives, indicators and targets of sustainable forest management as defined in the new CSA Z809-02 standard by the Canfor Forest Management Advisory Committee (FMAC). These were then used to develop the 2005 Sustainable Forest Management Plan (SFMP). The SFMP was audited by an independent third party (KPMG Performance Registrar) and approved on November 7th, 2005. This is the final year that the 2000 SFMP (certified to CSA Z809-96) and its objectives, will be reported on. The next annual report will report on the 2005 SFMP (certified to CSA Z809-02) and its targets.

Progress towards achievement of individual objectives is found in Sections 3 - 9.

3. Criterion 1: Conservation of Biological Diversity

Critical Element 1a: Ecosystem Diversity

Value (1a) 1.: Landscape level ecosystem diversity

Goal (1a) 1.1: Provide support to areas of rare physical environments

Indicator (1a) 1.1a: The amount of area of lands excluded from harvest in the DFMP

Objective (1a) 1.1a.1: One hundred percent (100%) of identified and validated rare physical environments will not be harvested	Acceptable variance: Zero
--	-------------------------------------

Status: Meets

The information for this objective is reported by timber year not fiscal year.

Canfor conducted no harvesting in any of the identified rare physical environments during this reporting period. See Table 1 for the rare physical environments identified on the Forest Management Agreement (FMA) area.

Rare Physical Environment	Area (ha)
Dunvegan West Wildland	
Cactus Hills (TWP 84 RGE 9 W6M)	214.8
Peace Parkland (TWP 81 RGE 7 W6M)	1,172.3
Peace River Dunvegan (TWP 81 to 83 RGE 7 & 8-W6M)	3,084.0
Total Dunvegan West Wildland	4,471.1
Parabolic Sand Dunes (TWP 69 RGE 3 W6M)	6,114.2
Total	10,585.3

Table 1. Rare Physical Environments in Canfor’s FMA Area

Indicator (1a) 1.1b: Cactus Hills (TWP 84 RGE9 W6M) and Peace Parkland (TWP 81 RGE 7 W6M)

Objective (1a) 1.1b.1: Nominate Cactus Hills and Peace Parkland areas as candidate sites for Alberta Special Places Program	Acceptable variance: These have already been nominated
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Status: Complete

These areas received official designation as a special place⁵ as part of the Dunvegan West Wildland on Dec 20th, 2000.

Goal (1a) 1.2: Maintain a range of seral stages

Indicator (1a) 1.2a: The amount of in old seral stage at present and key points in time

Objective (1a) 1.2a.1: Maintain old seral stages within the natural disturbance regimes at present and at key points in time	Acceptable variance: Not to fall outside the range of natural disturbance regimes for the old seral stage in the FMA area and FMUs.
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Status: Not scheduled reporting time

⁵ Refers to the Alberta Special Places Program which aims to complete a network of protected areas to preserve the environmental diversity of the Province’s 6 natural regions and 20 subregions

Old seral stage baseline (1999) results were previously reported in the May 1st, 2001 – April 30th, 2002 report. The key points in time are identified in Table 2. The next identified key point in time is 2009. The next reporting of this objective will occur at that time.

Key Points in Time	Corresponding Year
0	1999 (Baseline data)
10	2009
20	2019
50	2049
100	2099
200	2199

Table 2. Identified Key Points in Time

Indicator (1a) 1.2b: The amount in each seral stage at present and key points in time

<p>Objective (1a) 1.2b.1: Maintain seral stages within the natural disturbance regimes at present and key points in time</p>	<p>Acceptable variance: To be within the range of the natural disturbance regimes for seral stages in the FMA area and FMUs</p>
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Status: Not scheduled reporting time

Seral stage baseline (1999) results were previously reported in the May 1st, 2001 – April 30th, 2002 report. The key points in time are identified in Table 2. The next identified key point in time is 2009. The next reporting of this objective will occur at that time.

Critical Element 1b: Species Diversity

Value (1b) 1.: Landscape level species diversity and abundance

Goal (1b) 1.1: Minimize impacts on wildlife species population abundance

Indicator (1b) 1.1a: Amount of LOC access into the caribou area that is gated

<p>Objective (1b) 1.1a.1: 100% of Canfor’s LOC roads into the Caribou Area will be gated or other appropriate control measures, as approved by the government will be implemented</p>	<p>Acceptable variance: Zero variance, as directed by the Province</p>
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Status: Meets

Canfor has three gates on Canfor Licenses of Occupation (LOCs) that lead into the Caribou Area (Figure 4) to control access; one on the 4000 road, one on Norton Creek road and one on the W (Boulder) road. These gates were locked except during active log hauling. Oil and gas companies at these locations used manned gates occasionally in 2005 to ensure the gates remained locked.

The Alberta Sustainable Resource Development (ASRD) Industrial Access Gates Policy for the Smoky Forest Area (ASRD, 2004b) was followed in 2005. Canfor is required to make requests to ASRD to open the gates during active haul periods. The requests must be very specific and they are enforced by ASRD.

Gate monitoring continued in 2005. Canfor staff, Field Rep/ Road Patrol and contract persons were used. As noted above, Canfor required oil and gas companies to have a 24-hour gate person opening and closing the gates for some projects such as pipelining and drilling.

Locked gates continue to be the target of vandals. Although improvements to the gates and lock protection were implemented, locks were broken or cut off on several occasions. The locks were replaced as soon as possible.

Canfor is continuing to investigate the possibility of reclaiming other temporary roads to further restrict access from the south FMA area boundary within the Caribou Area. This will be in conjunction with the Caribou Landscape Management Association (CLMA) Long Term Access Plan (CLMA, 2005) for caribou.

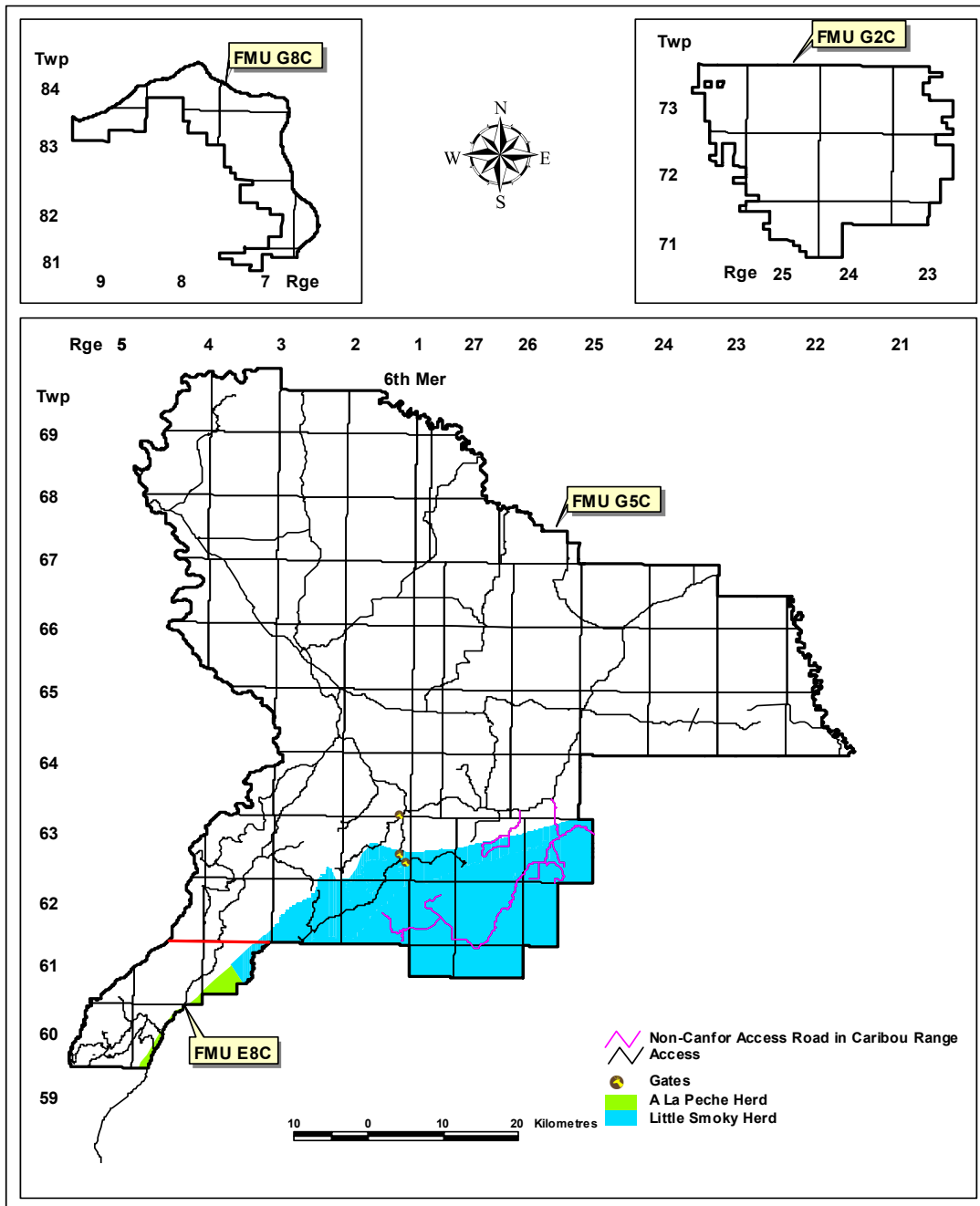


Figure 4. Caribou Area Map with Gate Locations

Indicator (1b) 1.1b: Level of suitable habitat for selected indicator species

<p>Objective (1b) 1.1b.1: Maintain habitat conditions required by identified selected indicator species using HSI models</p>	<p>Acceptable variance: For the 4 selected species is to maintain carrying capacity within 10% of current status at key points in time (0, 10, 20, 50, 100 and 200 years)</p>
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Status: Not scheduled reporting time

Baseline (1999) Habitat Suitability Index (HSI) results for the 4 selected species managed under HSI modeling (Moose, Pine Marten, Pileated Woodpecker and Barred Owl) were previously reported in the May 1st, 2001 – April 30th, 2002 report. At that time, Canfor met all of the carrying capacity targets. The key points in time are identified in Table 2. The next identified key point in time is 2009.

Canfor has recently adopted a wildlife guild approach to evaluate the habitat requirements of five selected indicator species - moose, American marten, pileated woodpecker, barred owl and grizzly bear. This approach models habitat requirements and critical life requisites for a group of species (i.e., guild) that utilize the same habitat type. GISmo Solutions Ltd. was retained to explore the use of wildlife guilds as a method to address the habitat requirements of selected indicator species on the FMA area. GISmo integrated a wildlife habitat guild model (De La Mare *et al*, 2002) and a forest succession model (Geographic Dynamics Corp, 2001) to determine their potential role in the evaluation of wildlife habitat over a twenty-year forecasting period (1997 – 2017). The most significant observation to come out of the initiative was the understanding of the importance of scale between the successional model and the habitat guild resolutions. It was concluded that the necessary linkages and data sets could be derived from the models to perform a more comprehensive analysis of wildlife guild habitat requirements if scales were similar (Desilets, 2005).

<p>Objective (1b) 1.1b.2: Maintain habitat conditions required by identified selected indicator species, using habitat constraint modeling</p>	<p>Acceptable variance: Woodland Caribou: no more than 25% of the area in pioneer or young seral condition and no less than 15% in old seral condition Bull Trout: within a defined watershed, total vegetated cover removal will not exceed 35% ECA above the H60. Trumpeter Swan: zero with respects to harvesting within “no-harvest” buffers</p>
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Status: Meets: Trumpeter Swans, In progress: Woodland Caribou and Bull Trout

Woodland caribou and bull trout targets are checked annually through the DFMP/AOP validation process developed by Timberline Forest Inventory Consultants. The compiled results for these species are derived by merging the current Annual Operating Plan (AOP) into the Detailed Forest Management Plan (DFMP) with an updated harvest sequence.

Targets established for woodland caribou habitat are a maximum of 20% of the area in the pioneer or young seral stage, and a minimum of 20% of the area in old seral stage. The acceptable variance is a maximum of 25% of the area in the pioneer or young seral stage, and a minimum of 15% of the area in old seral stage. Initial baseline (1999) results show that Canfor had 13% in pioneer/young seral stages and 10% in old seral stage in the FMA area. Table 3 shows the current status for pioneer/ young and old seral stages as of May 1st, 2005 and the projected distribution to 2199. The present age class structure (2005) is on track to meet the 15% old seral condition by 2019.

Year	Pioneer/Young(%)	Old (%)
1999	13	10
2005	15	10
2009	18	11
2019	22	15
2049	24	32
2099	24	38
2199	25	42

Table 3. Percentage of Pioneer/ Young and Old Seral Stages in the Caribou Area

Bull trout habitat is monitored by calculating the Equivalent Clearcut Area⁶ (ECA) in bull trout watersheds above the H60⁷ line. Initial baseline (1999) results indicate there are 3 watersheds above the ECA of 35% that were flagged for concern (Table 4). Each year Canfor utilizes the DFMP/AOP validation process to verify whether watersheds exceed the target. The 2005 results indicate there are no additional watersheds exceeding the target than what were shown in the 1999 baseline data. The ECA values for each of these watersheds have decreased in 2005 from 1999, with only one watershed (2057) remaining above the 35% target. Table 4 indicates that by 2009 (the next reporting period) the ECA for all three watersheds will be less than 35%.

Watershed ID	1999 ECA %	2005 ECA %	2009 ECA %
2057	48	40	-
4257	36	-	-
5642	37	-	-

Table 4. Bull Trout Watershed Above the ECA of 35% Flagged for Concern

Water bodies supporting trumpeter swan habitat are identified by Alberta Sustainable Resource Development (ASRD) Fish and Wildlife Division and provided to Canfor. Canfor then uses this information to update its database on an annual basis.

In 2004, 47 trumpeter swan waterbodies were identified on the FMA area. In 2005, Fish and Wildlife removed 18 waterbodies and added an additional 40 bringing the total number of identified trumpeter swan waterbodies to 69. Protection guidelines for trumpeter swan waterbodies, which include no harvesting within 200m of the high water mark, are detailed in the FMA 9900037 Operating Ground Rules, Section 7.7.4 Trumpeter Swans. (ASRD, 2005)

The 2004/05 harvest areas were superimposed onto the Alberta Vegetation Inventory (AVI) to determine if any infractions of harvesting occurred within the required buffer area. The results of the overlay found that two harvested areas infringed upon one of the new trumpeter swan waterbodies that was added in 2005 (Table 5). Because the ASRD changes to the trumpeter swan waterbodies were not supplied to Canfor until after the completion of its harvesting season, at the time of harvest, Canfor met the best available data at the time.

Harvest Area	Area (ha) of Infringement
G152457	0.63
G152446	0.08
Total	0.71

Table 5. Area of Infringement of Trumpeter Swan Buffers

⁶ ECA refers to an area that has been harvested, cleared or burned. The ECA index, expressed as a percentage, describes an area of regenerated growth in terms of its hydrological equivalence to a clearcut. As the area regenerates and growth develops, the hydrological impact is reduced

⁷ H60 is the elevation above which 60% of the watershed lies (the watershed area above the H60 is considered as the source area for major snowmelt peak flows)

Indicator (1b) 1.1c: Amount of significant wildlife mineral licks

Objective (1b) 1.1c.1: Protect 100% of identified significant wildlife mineral licks	Acceptable variance: Zero
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Status: Meets

Canfor implements 100-meter buffers on identified significant “natural” mineral licks. Alberta Sustainable Resource Development (ASRD) does not require buffers on “man-made” licks (usually as a result of seismic activity) as the seismic company is responsible for capping these holes.

	Mineral Licks – Natural (Buffered)
2003 and earlier	60
2004	16
2005	15
Total	93

Table 6. Number of Mineral Licks

In 2005, fifteen natural mineral licks were identified and buffered within the FMA area. All field staff are trained in the identification of wildlife licks.



Figure 5. Natural Mineral Lick

Goal (1b) 1.2: Maintain flora and fauna on the landscape

Indicator (1b) 1.2a: The amount of area in each seral stage at present and key points in time

Objective (1b) 1.2a.1: Maintain seral stages within the natural disturbance regimes at present and key points in time	Acceptable variance: To be within the range of the natural disturbance regimes for seral stages in the FMA area and FMUs.
---	---

Status: Not scheduled reporting time

Repeat objective. Refer to Objective (1a) 1.2b.1.

Indicator (1b) 1.2b: Presence of rare plants on the FMA area

<p>Objective (1b) 1.2b.1: Develop a predictive tool to determine the probability of the occurrence of rare plant species on the FMA area</p>	<p>Acceptable variance: Not appropriate for this objective</p>
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Status: Complete

A model for predicting occurrence(s) of rare plants within the FMA area was developed in 2003.

All field staff are trained to watch for rare plants. The Pre Harvest Assessment (PHA) crew utilizes maps from the model to identify potential sites that may contain rare plants. These sites are then field checked for rare plants. An example of a map produced from the model is provided in Figure 6. No rare plants were identified in 2005.

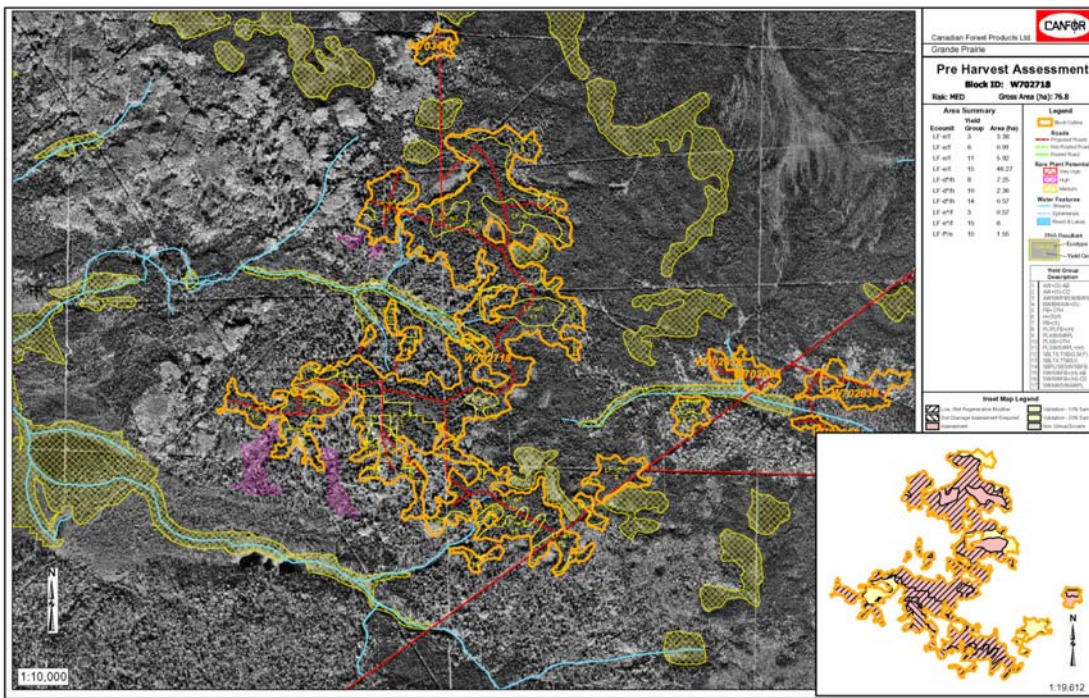


Figure 6. Map with Rare Plant Potential

Indicator (1b) 1.2c: Presence of endangered or threatened wildlife species ('At Risk' and 'May Be At Risk' listings) on the FMA area

<p>Objective (1b) 1.2c.1: To develop management strategies to address the identified endangered or threatened wildlife species on the FMA area</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

Canfor continues to track the status of 'endangered'⁸ and 'threatened'⁹ vertebrate species (Engel, 2005) on its FMA area using the Alberta Sustainable Resource Development (ASRD) and Government of

⁸ Endangered - any species facing imminent extirpation or extinction.
⁹ Threatened - any species likely to become endangered if limiting factors are not reversed.



Canada species at risk websites (<http://www3.gov.ab.ca/srd/fw/speciesatrisk/> and http://www.sararegistry.gc.ca/default_e.cfm). Canfor's list is updated annually.

There are no 'endangered' species on the FMA area however the woodland caribou (*Rangifer tarandus caribou*) and trumpeter swan (*Cygnus buccinator*) are designated as 'threatened' under the Alberta *Wildlife Act*.

Canfor has undertaken a range of initiatives to maintain woodland caribou habitat on the FMA area including support of caribou research, participation in seismic line reforestation, modeling and assessment of caribou habitat, adoption of protocols to minimize caribou disturbance and a two-year deferral of harvest and road construction in caribou ranges (Stephenson, 2005).

Two hundred meters of "no harvest" buffers are maintained around identified trumpeter swan areas to protect nesting sites, unless changes are recommended or approved by the ASRD. Canfor adheres to all ASRD operating ground rules and guidelines regarding swan habitat.

Indicator (1b) 1.2d:Type, amount and location of habitat required for selected indicator species

Objective (1b) 1.2d.1:	Acceptable variance:
Compile a list of habitat requirements for selected indicator species within Canfor's FMA area	To maintain a carrying capacity within -10% of the current status at key points in time (0, 10, 20, 50, 100 and 200 years)

Status: Not scheduled reporting time

Baseline (1999) Habitat Suitability Index (HSI) results, for the 4 selected species managed under HSI modeling (Moose, Pine Marten, Pileated Woodpecker and Barred Owl), were previously reported in the May 1st, 2001 – April 30th, 2002 report. At that time, Canfor met all of the carrying capacity targets. The key points in time are identified in Table 2. The next identified key point in time is 2009.

Canfor has recently adopted a wildlife guild approach to evaluate the habitat requirements of five selected indicator species - moose, American marten, pileated woodpecker, barred owl and grizzly bear. This approach models habitat requirements and critical life requisites for a group of species (i.e., guild) that utilize the same habitat type. GISmo Solutions Ltd. was retained to explore the use of wildlife guilds as a method to address the habitat requirements of selected indicator species on the FMA area. GISmo integrated a wildlife habitat guild model (De La Mare *et al*, 2002) and a forest succession model (Geographic Dynamics Corp, 2001) to determine their potential role in the evaluation of wildlife habitat over a twenty-year forecasting period (1997 – 2017). The most significant observation to come out of the initiative was the understanding of the importance of scale between the successional model and the habitat guild resolutions. It was concluded that the necessary linkages and data sets could be derived from the models to perform a more comprehensive analysis of wildlife guild habitat requirements if scales were similar (Desilets, 2005).

Objective (1b) 1.2d.2:	Acceptable variance:
Review the list of selected indicator species regarding potential addition of an amphibian species	Zero

Status: In progress

To meet this objective it was recognized that, due to their distribution, it is important to collect amphibian data at a provincial scale rather than at an FMA area scale. Therefore, in 2003 Canfor made contributions to participate in the Alberta Biodiversity Monitoring Program (ABMP). Canfor's Forest Management Advisory Committee (FMAC) supported this approach.

In 2004, the ABMP initiated a Prototype Project (2004 – 2006) to test and refine protocols for data collection, establish a data management system, design a range of products and services, namely:

- Conduct fieldwork;
- Develop remote sensing protocols;
- Develop cost effective aquatic protocols;
- Finalize all protocols to acceptable cost effective standards;
- Develop a basic data management system and populate it with field data;
- Develop biodiversity indices; and
- Develop a range of products and services the program will deliver.

Forty-nine sites, including twelve sites accessible by helicopter only, were sampled in 2004. Each site was visited three times. A basic data management system has been developed and data conversion is being conducted to incorporate GIS and remote sensing data.

In 2005, protocols for aquatic species, including amphibians, were tested and a report prepared (Eaton, 2005). According to the report, amphibian protocols were tested and for vertebrates, "the protocol is simple in concept and worked well during the field tests".

Critical Element 1c: Genetic Diversity

Value (1c) 1.: Genetic diversity

Goal (1c) 1.1: Conserve genetic diversity of tree species

Indicator (1c) 1.1a: The effective number of unrelated genotypes (trees) in the breeding program

<p>Objective (1c) 1.1a.1: To maintain between 300-600 genotypes in breeding programs to safeguard long-term diversity</p>	<p>Acceptable variance: The number of genotypes for each tree species in the breeding program will be between 300-600</p>
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Status: In progress

A genotype is the genetic makeup of an organism. The higher the number of genotypes, the more diverse the gene pool. The number of genetically unique individual trees found in Canfor's breeding program are:

- White Spruce breeding program: 345 genotypes
- Lodgepole Pine breeding program: 610 genotypes

The number of genotypes in the Lodgepole Pine breeding program is marginally above the target of 300–600. This number will be reduced to within the target range following completion of the roguing process (removing poorly performing genotypes). Seed production in the orchard has not met target levels, so no roguing was completed in 2004 or 2005.

Indicator (1c) 1.1b: The effective number of unrelated genotypes (trees) in the seed orchard

<p>Objective (1c) 1.1b.1: To maintain sufficiently large and balanced orchard populations of unrelated trees (20-60 genotypes) to safeguard diversity in a given seed orchard</p>	<p>Acceptable variance: Zero for maintaining the minimum number, however more than 60 clones are acceptable</p>
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Status: In progress

Within the breeding programs, the individually unique genotypes are either interbred (creating families with similar genetic makeup) or cloned (exact replicate of the genetic makeup of the parent) depending on the program. The White Spruce program is a ‘clonal’ orchard, and the Lodgepole Pine program is a ‘family’ orchard. The number of unrelated genotypes are found below:

- White Spruce breeding program: 159 clones
- Lodgepole Pine breeding program: 148 families

The numbers of clones and families are currently above the target, but within the acceptable variance. The higher number of clones and families indicate a more diverse gene pool. Over time, as the orchards go through the roguing process, the numbers will be reduced.

Indicator (1c) 1.1c: The amount of area planted with non-seed orchard stock

<p>Objective (1c) 1.1c.1: To plant 30% of the FMA area cut units with the bulk seed collection and 70% with seed orchard stock within the following Natural Subregions: Central Mixedwood, Dry Mixedwood and Lower Foothills</p>	<p>Acceptable variance: To plant not more than 70% of the harvested area with seed orchard seed on a 5 year average</p>
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Status: Meets

2004 was the first year that genetically improved White Spruce was planted (44.4%). In 2005, the percentage planted increased to 78.1%. There have been good seed crops at the orchard for White Spruce over the past two years, whereas the pine crops have not been producing as well. Steps are being taken to increase pine production through girdling trials and top pruning management. The goal is to eventually use 70% orchard stock and 30% bulk seed stock for Canfor’s planting program overall (all species). As Table 5 demonstrates, the percentage of overall genetic improved stock is steadily increasing and will continue to increase as the orchard reaches full production.

Stock Origin	2002 (%)	2003 (%)	2004 (%)	2005 (%)
Bulk Lodgepole Pine Seed Collection Stock	76.4	77.3	84.2	96.4
Bulk White Spruce Seed Collection Stock	100.0	100.0	55.6	21.9
Bulk Black Spruce Seed Collection Stock	100.0	100.0	100.0	100
Genetically Improved Lodgepole Pine Seed Orchard Stock	23.6	22.7	15.8	3.6
Genetically Improved White Spruce Seed Orchard Stock	0	0	44.4	78.1
Genetically improved stock overall (all species)	23.6	22.7	29.0	45.0

Table 7. Percent of Bulk Seed Collection Stock and Genetically Improved Stock Planted

Indicator (1c) 1.1d: The number of mother trees represented in the bulk seed collections over a ten-year period

<p>Objective (1c) 1.1d.1: To include cones of at least 400-750 mother trees for the bulk seed collections for lodgepole pine and whitespruce and 50-150 mother trees for black spruce over a ten year period</p>	<p>Acceptable variance: Zero for maintaining a minimum of 400 mother trees for lodgepole pine and white spruce and a minimum of 50 mother trees for black spruce</p>
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Status: Meets.

In 2005, Canfor planned to collect black spruce seed, however, due to contractor logistics, the collection did not happen. The seed requirements within the recently revised (2005) seed zones are currently being evaluated. Black Spruce and Lodgepole Pine seed will be collected in early winter 2006. White Spruce seed requirements will be analyzed and if needed, collected during the summer of 2006.



Figure 7. Helicopter Cone Rake

When seed is collected, the cones are collected using a helicopter cone rake, which enables quick cone collection from many trees (Figure 7). The higher the number of trees the seed is collected from, the higher the genetic diversity. The minimum number of trees to collect seed from in the wild is 30, as stated in the “Standards for Tree Improvement” (ASRD, 2005a).

Goal (1c) 1.2: Maintain conditions that do not negatively impact on genetic diversity of wildlife species

Indicator (1c) 1.2a: Landscape structure

<p>Objective (1c) 1.2a.1: To compare current landscape structure to future landscape structure at key points in time and develop management strategies</p>	<p>Acceptable variance: Distribution of Seral Stages: Not to fall outside the range of natural disturbance regimes for the seral stages in the FMA area and FMUs Distribution of Patch Sizes: to be within the range of natural disturbance types in the FMA area and FMUs Fragmentation: Mean patch size (MPS) will not fall below 25% of the current MPS for the FMA area and each FMU at the key points in time (0,10,20,50,100 and 200 years) Connectivity: Mean nearest neighbour distance (MNND) will not exceed the maximum MNND (as calculated from the current status plus 25%) for the FMA area and each FMU at key points in time Patch Shape: Area weighted mean shape index (AWMSI) will not fall below 2 times the current AWMSI of the pioneer seral stage for the FMA area and FMU area at key points in time</p>
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Status: Not scheduled reporting time

Baseline (1999) old seral stage results were previously reported in the May 1st, 2001 – April 30th, 2002 report. Canfor has selected 5 indices to monitor landscape structure: distribution of seral stages, distribution of patch sizes, mean patch size, mean nearest neighbour distance and area weighted mean shape index. The targets for all indices are generally being met over the planning horizon. The indices will continue to be monitored and reported at key points in time. The key points in time are identified in Table 2. The next identified key point in time is 2009. The next reporting of this objective will occur at that time.

4. Criterion 2: Maintenance and Enhancement of Forest Ecosystem Condition and Productivity

Critical Element 2a: Forest Health

Value (2a) 1.: Healthy forest stands

Goal (2a) 1.1: Conserve forest health

Indicator (2a) 1.1a: Number of occurrences and amount of area impacted by fire and catastrophic events of insects, disease, windfall etc.

<p>Objective (2a) 1.1a.1: Limit the number of occurrences and amount of area impacted by fire and catastrophic events of insects, disease, windfall etc.</p>	<p>Acceptable variance: For company caused fires: zero For catastrophic events of insects, disease, windfall within the FMA area: zero</p>
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Status: Meets

There were no catastrophic events of windfall, insects and disease reported in the FMA area for this reporting period.

All harvested areas containing burned piles are infrared scanned the following spring after burning. Results from spring 2005 indicated a hot spot in the E8 operational unit. A helicopter and suppression crew was dispatched. The crew did not find any evidence of the hot spot, the area around the indicated hot spot was dug up and thoroughly wetted down. A subsequent infrared scan did not show any further evidence of a hot spot. This was recorded as a forest industry fire, shown in the table below. Because no fire was actually discovered, the status has been reported as “Meets”. There was no other company caused fires from all other activities in the FMA area for this reporting period.

There were 8 minor fires in the FMA area. Table 8 details a complete list of the fires on the FMA area for 2005. Table 9 shows fire history over the last four years.

FIRE NUMBER	LOCATION	CAUSE	SIZE
GWF-045-2005	01-13-063-03-6	Lightning	0.01
GWF-050-2005	14-11-066-03-6	Lightning	0.1
GWF-053-2005	08-25-066-04-6	Lightning	0.01
GWF-058-2005	03-12-063-01-6	Forest Industry	0.01
GWF-062-2005	01-29-068-02-6	Recreation	0.01
GWF-071-2005	16-11-064-23-5	Lightning	0.01
GWF-073-2005	13-05-067-26-5	Lightning	0.01
GWF-079-2005	09-22-065-25-5	Lightning	0.01
Total			0.17 ha

Table 8. Fires on Canfor’s FMA area in 2005 Supplied by ASRD

Year	2002	2003	2004	2005
Area Burned (ha)	61.90	6.31	0.05	0.17

Table 9. Fire History on Canfor’s FMA Area

Windfall is monitored on all types of flights (recon, aerial spray, final clearances). During the various flights for reforestation activities, the stands adjacent to harvest areas, shown in Table 10, contained varying amounts of windfall. These were evaluated during the fall, 2005. Most are in buffers or

retention areas. The windfall adjacent to P32078, P33007 and P341619 will require further evaluation in 2006.

Harvest Area	Comment	Approximate Area
E633573	Blowdown NE corner	1.5
W753140	Minor blowdown	1.5
S261281	Minor blowdown	1.0
P32078	Blowdown near block	3.0
P341619	Blowdown near block	6.0
P33007	Blowdown near block	5.0
E632244	Minor blowdown	1.3
S261755	Blowdown near block	2.3
W772132	Minor blowdown	1.0
W741107	Minor blowdown	0.5
Total		23.1

Table 10. Status of Windfall Adjacent to Previously Harvested Areas

During 2005, Canfor has continued to be a member of the Peace Area Coalition – Mountain Pine Beetle and the West Yellowhead Mountain Pine Beetle Coordinating Committee.

Canfor and Weyerhaeuser have been actively involved in the pre-suppression and suppression activities to control MPB in areas of B.C. To that end, a proposal entitled, “A Collaborative Proposal to Monitor and Control Mountain Pine Beetle Incursions into West Central Alberta”, was prepared by Canfor and Weyerhaeuser. This was submitted to the Forest Resource Improvement Association of Alberta in December, 2004 and subsequently approved in January 2005.

During the summer of 2005, Mountain Pine Beetle (*Dendroctonus ponderosae*) was discovered in the E10 area near Grande Cache, which is only 30 kilometers from the southern boundary of the FMA area. Alberta Sustainable Resource Development (ASRD) mounted a very impressive campaign to contain this outbreak. Canfor offered resources to this effort and stayed in contact with ASRD to ensure that Canfor’s interests were addressed.

In December, ASRD asked FMA holders to “begin discussions on harvest area re-sequencing and re-planning strategies incorporated in the Pine Strategy of the Emergency Response Plan.” Canfor is working with adjacent FMA holders, quota licensees, ASRD and other interested parties to develop a response that balances the need for aggressive action against Mountain Pine Beetle with other values that are being managed.



Figure 8. Mountain Pine Beetle



Figure 9. Mountain Pine Beetle Attack

Critical Element 2b: Ecosystem Resilience

Value (2b) 1.: Ecosystem resilience

Goal (2b) 1.1: Sustain capability of ecosystem to recover from both natural and human-caused disturbances

Indicator (2b) 1.1a: The amount of area in the regenerated yield group

<p>Objective (2b) 1.1a.1: To regenerate 100% of the harvested area as per the regenerated yield group as defined in the DFMP</p>	<p>Acceptable variance: +/- 10% of the area of regenerated yield groups; and +/- 5% of the AAC for C, CD, DC & D, provided that the AAC for both coniferous and deciduous are sustained (within -5%)</p>
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Status: Does Not Meet

Canfor made a commitment within the DFMP to compare planned versus actual reforestation by yield group over a 5-year period. Table 11 represents 5 years of data for 2000 –2005 inclusive. Of the 9 yield groups listed, all except 3, 9 and 11 are within the acceptable variance of 10%. Last year the yield groups that were outside the acceptable variance were 9,11,14 and 17. As more area is harvested in each yield group, the variances are less.

Silviculture staff are working to get each yield group within the acceptable variance.

	Yield Group (ha)									Total
	2	3	8	9	11	12	14	16	17	
Pre Regeneration Yield Group (AVI)	1549	879	3615	272	737	887	667	4387	1672	14664
Treated Regeneration Yield Group	1522	690	3818	199	823	928	637	4477	1570	14664
Percent Difference	-2%	-22%	6%	27%	12%	5%	-4%	-2%	-6%	0%

Table 11. Planned Versus Actual Reforestation by Yield Group

Canfor also monitors this objective by comparing the original declarations versus current declarations (C-coniferous, CD-coniferous/deciduous, DC-deciduous/coniferous and D-deciduous). For harvest areas logged from May 1991 to present, less than 1% (0.8%) of the harvest areas have changed from their original declaration. This is within the acceptable variance of 5%.

Indicator (2b) 1.1b: The amount of area in each seral stage at present and key points in time

<p>Objective (2b) 1.1b.1: Maintain seral stages within the natural disturbance regimes at present and key points in time</p>	<p>Acceptable variance: To be within the range of the natural disturbance regimes for seral stages in the FMA area and FMUs</p>
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Status: Not scheduled reporting time

Repeat objective. Refer to Objective (1a) 1.2b.1.

Indicator (2b) 1.1c: Timeframe for treating harvested areas

<p>Objective (2b) 1.1c.1: All harvested sites are treated within 18 months after the end of the timber year</p>	<p>Acceptable variance: A variance of +3 months is acceptable in order to accommodate the occurrence of fire and periods of extreme weather conditions including floods and drought</p>
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

A report of the harvest areas in the 2003/2004 timber year was generated from Canfor’s block tracking database (Genus). The results showed that all harvest areas were planted within 18 months after the end of the timber year (Table 12).

Timber Year	# of Harvest Areas	# of Harvest Areas Planted Within 18 Months
2000/2001	130	130
2001/2002	136	136
2002/2003	127	127
2003/2004	126	126

Table 12. Number of Harvest Areas Planted Within 18 Months

Indicator (2b) 1.1d: Soil productivity

Refer to (3b) Goal 1.1 indicators and objectives.

As stated in the CSA Matrix (Appendix 7 of DFMP), soil productivity is covered in “Critical Element 3b, Goal 1.1” with 3 indicators and 3 objectives. Soil Productivity is a value in 3b, but the Forest Management Advisory Committee (FMAC) also viewed soil productivity as an indicator for “Critical Element 2b, Goal 1.1”. Therefore, the text for “Critical Element 3b, Goal 1.1” applies to this section as well.

Critical Element 2c: Ecosystem Productivity

Value (2c) 1.: Ecosystem productivity

Goal (2c) 1.1: Maintain ecosystem productivity

Indicator (2c) 1.1a: Level of suitable habitat for selected key indicator species

<p>Objective (2c) 1.1a.1: Maintain habitat conditions required by identified key indicator species using HSI models</p>	<p>Acceptable variance: For the 4 selected species is to maintain carrying capacity within 10% of current status at key points in time (0, 10, 20, 50, 100, 200)</p>
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Status: Not scheduled reporting time

Repeat objective. Refer to Objective (1b)1.1b.1.

<p>Objective (2c) 1.1a.2: Maintain habitat conditions required by identified selected indicator species, using habitat constraint modeling</p>	<p>Acceptable variance: Woodland Caribou: no more than 25% of the area in pioneer or young seral condition and no less than 15% in old seral condition Bull Trout: within a defined watershed, total vegetated cover removal will not exceed 35% ECA above the H60. Trumpeter Swan: zero with respects to harvesting within “no-harvest” buffers</p>
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Status: Not scheduled reporting time

Repeat objective. Refer to Objective (1b)1.1b.2.

Indicator (2c) 1.1b: Number of ecosite phases distributed across the FMA

<p>Objective (2c) 1.1b.1: Identify ecosite phase distribution objectives for application in the next DFMP</p>	<p>Acceptable variance: Not applicable until the research program is completed</p>
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Status: In progress

Ecosite phases¹⁰ on the FMA area are defined in, “Refinement of Northern and West-Central Alberta Field Guides” (Canfor, 1999), and in the following guides; Ecosites of West-central Alberta (1996), Ecosites of Northern Alberta (1996), and Ecosites of the Boreal Mixedwood Region of Canfor's Grande Prairie FMA Area (2000).

The collection process of Pre Harvest Assessment (PHA) data was amended in the 2004 field season. The initial stratification step now involves utilization of the landscape level ecosite mapping (Ecological Analysis and Modeling Reports). Once in the field, the mapped ecosite is confirmed or amended to the actual. All spatial and tabular data is entered into Canfor's block tracking database (Genus) at the end of the field season.

Indicator (2c) 1.1c: Measurement of tree growth (site index) based on yield curves (moisture and nutrient regime)

<p>Objective (2c) 1.1c.1: Maintain growth and yield projections for tree species, as stated in the DFMP</p>	<p>Acceptable variance: A decrease of no more than 5% from the growth and yield projections, as outlined in the DFMP. Measured growth or yield above the projected value is acceptable</p>
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Status: In progress

Canfor has established Permanent Sample Plots (PSP) to obtain data for monitoring growth and yield. The Company actively participates in growth and yield associations such as Foothills Growth and Yield Association (FGYA) and Western Boreal Growth and Yield Association (WESBOGY) and the Mixedwood Management Association.

Canfor submitted a growth and yield monitoring program to ASRD which was approved on May 3rd of 2004. In the 2005 field season, a total of 153 Permanent Sample Plots were re-measured and 100 Post Harvest Regenerated plots were established.

¹⁰ An ecosite phase is an ecological unit, a subdivision of an ecosite that is based on the dominant canopy structure and composition. The level of resolution of the data is at the stand level.

5. Criterion 3: Conservation of Soil and Water Resources

Critical Element 3a: Physical Environments

Value (3a) 1.: Gross landbase

Goal (3a) 1.1: Minimize loss of landbase

Indicator (3a) 1.1a: The amount of productive area Canfor utilizes for future permanent roads (LOC)

Objective (3a) 1.1a.1: To have less than 2% of productive area in Canfor's future permanent roads (LOC)	Acceptable variance: Zero
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Status: Meets

A 2% withdrawal of productive forest landbase equals 12,983 ha or approximately 5,000 km of roads. Since 1999, Canfor has added approximately 103 ha (54 km) of License of Occupation (LOC) roads (Table 13).

Canfor limits the amount of permanent LOC road it constructs by actively working with the energy sector to promote shared access through road use agreements and joint development of new access.

In 2005, there were no LOC roads constructed.

Year	LOC #	Name	Length (km)	Area New (ha)
1999	-	-	0.00	0.00
2000	LOC 920512	W -road	12.00	24.00
2001	LOC 012326	4145 access to SML010050	1.84	2.76
2002	LOC 023022	Camp 1 W77	8.28	11.81
	LOC 020871	E8 S-road	9.94	14.98
	LOC 020870	E8 E road	4.86	8.11
2003	LOC 030770	E8 Ridge road	8.23	14.89
	LOC 031510	Camp 5 K-road	1.15	1.73
	LOC 033475	E8 Bolton Mainline	7.26	23.39
2004	LOC 040261	T140 access to SML 04005	0.62	1.21
2005	-	No new LOCs constructed	0.00	0.00
Total			54.18	102.88

Table 13. Canfor LOC Roads Constructed Within the FMA Area

In November 2005 Canfor and Suncor Energy Ltd signed a Letter of Agreement aimed at minimizing the environmental footprint of forestry and natural gas activities. Collaboration will be in several areas with roads being one area with great potential for synergies. Through joint planning of corridors and road construction standards, the amount of “new” area in permanent roads should be reduced.

Indicator (3a) 1.1b: The amount of area permanently lost to other industry activities

Objective (3a) 1.1b.1: To minimize loss of area by working with other parties	Acceptable variance: Canfor has no direct control over the amount of other industry activity that occurs in the FMA area; the Company can only monitor trends and communicate with other companies on an informal basis
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Status: Meets

Canfor actively works with the energy sector to share access through road use agreements and utilizing existing seismic lines as much as possible for new road construction. Examples are:

- **Canfor/Suncor Energy Ltd.** - To avoid the need for "new" construction, Canfor's assigned four of Canfor's LOCs to Suncor access into its fields located in the Deep Valley Creek area: LOC 791358 (6.2 km), LOC 821100 (3.5 km), LOC 821101 (6.6 km) and LOC 930667 (0.3 km). In addition, Suncor has agreed to use gravel from Canfor's gravel pit located at Km 4145 rather than excavating its own gravel pit.
- **Canfor/RSX Energy Ltd.** - At Canfor's request, RSX Energy Ltd. agreed to re-route its proposed access road to use an existing LOC and Mineral Surface Lease (MSL) for its access to MSL 056511/LOC 054561, avoiding 0.37 ha of new cut.
- **Canfor/Progress Energy Ltd.** - At Canfor's suggestion, Progress Energy Ltd. and Canfor are jointly reforesting 7 wellsites located in Township 67 Range 1 W6M.

The area withdrawn as a result of the energy sector since 1994 is reflected in Table 14.

Period Ending Dec. 31	Wellsites, Pipelines, Powerlines and Roads	
	Dispositions	Area Withdrawn (ha)
1994	176	545
1995	123	415
1996	154	392
1997	203	632
1998	168	648
1999	147	310
2000	194	780
2001	138	375
2002	111	305
2003	237	388
2004	418	399
2005	489	772
Total		5,961

Table 14. Area Loss From Energy Sector Withdrawals

In November 2005, Canfor also signed a Letter of Agreement with Suncor Energy Ltd. that increases collaboration of activities and reduces cumulative impact on the landbase. Some of the key topics of interest within the agreement are:

- Planning document review;
- Access management;
- Caribou Restoration Pilot Project;
- Stream crossing monitoring;
- Archaeological and heritage site management;
- Emergency response plans;
- Data sharing; and
- Fire protection.

Similar agreements with other oil and gas companies are also being negotiated.

Value (3a) 2.: Rare physical environments (presence of)

Goal (3a) 2.1: Protect the natural states and processes of the rare physical environments

Indicator (3a) 2.1a: The amount of area of lands excluded from harvest, in the DFMP

<p>Objective (3a) 2.1a.1: One hundred percent (100%) of identified and validated rare physical environments will not be harvested</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

Repeat objective. Refer to Objective (1a) 1.1a.1.

<p>Objective (3a) 2.1a.2: No active reforestation of grasslands</p>	<p>Acceptable variance: Less than 0.5 ha of grassland adjacent to a harvested area being reforested (based on the database query) will be considered acceptable</p>
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

A grassland is defined in the Alberta Vegetation Inventory (AVI) Standards (version 2.1) as areas that have less than 6% canopy cover and are non-forested vegetated land = “HG”, and are greater than 4 ha in size.

The 2004/2005 harvest areas were superimposed onto the AVI. Results indicated that no harvest area boundaries overlapped into grasslands.

<p>Objective (3a) 2.1a.3: Protect 100% of identified significant wildlife Mineral licks</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

Repeat objective. Refer to Objective (1b) 1.1c.1.

Goal (3a) 2.2: Provide support to areas of rare physical environments

Indicator (3a) 2.2a: The amount of area of lands excluded from harvest in the DFMP

<p>Objective (3a) 2.2a.1: Nominate Cactus Hills and Peace Parkland areas as candidate sites for Alberta Special Places Program</p>	<p>Acceptable variance: These have already been nominated</p>
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Status: Complete.

Repeat objective. Refer to Objective (1a) 1.1b.1.

Goal (3a) 2.3: Maintain a combination of managed and rare physical environments on the forest landbase

Indicator (3a) 2.3a: The amount of area in managed forests and rare physical environments

<p>Objective (3a) 2.3a.1: A combination of managed and rare physical environments will always be managed on the landbase</p>	<p>Acceptable variance: Zero</p>
---	---

Status: Meets

This objective is very similar to objective (1a) 1.1a.1. No harvesting occurred in any of the rare physical environments listed in Table 1.

Critical Element 3b: Soil Resources

Value (3b) 1.: Soil Productivity

Goal (3b) 1.1: Minimize impacts on soil productivity

Indicator (3b) 1.1a: Measurement of site quality (site index) based on ecological type (moisture and nutrient regime)

<p>Objective (3b) 1.1a.1: To develop a predictive model of site quality (includes soil productivity) to aid in the formulation of site specific forest management</p>	<p>Acceptable variance: As in the Forest Productivity Evaluation report by GDC (Canfor 2001)</p>
--	---

Status: In progress

Tree growth (site index) can be used as a surrogate to measure soil productivity (site quality). Canfor has developed site indices (growth and yield tables) for defined yield groups (Canfor, 1999) that play an important role in the prediction of future forest growth. Within each yield group it is recognized that there is variation in site index and that harvesting is not random within a yield group.

The strategy and implementation schedule identified in the Growth and Yield Monitoring Plan (J.S. Thrower, 2004) is being followed: A portion of the existing 723 fire origin permanent sample plots (PSP) will be converted to post-harvest regenerated (PHR) stand PSPs following harvest. This will provide valuable information on pre and post-harvest site indices. In addition, new GYMP plots are being established on a 1.67 km grid (one plot every 280 ha) in existing PHR and future PHR stands. PHR stands must reach a breast height age of 20 years (25 - 30 years total age) before reliable estimates of site index can be obtained with height - age equations. Each year all re-measured plot data that has suitable pre and post-harvest site index estimates will be used to calculate average differences and associated confidence intervals. The sites represented in the sample will limit the interpretation of the results.

Average post-harvest site index will be compared to pre-harvest site index annually and the resultant data reported in the Annual Performance Monitoring Report, commencing in 2008.

Indicator (3b) 1.1b: The amount of coarse and fine woody debris on site, post harvesting

<p>Objective (3b) 1.1b.1: To develop a methodology to measure coarse woody debris, post harvesting</p>	<p>Acceptable variance: On average, no less than 90% of the pre-harvest CWD (coarse woody debris) left on site</p>
---	---

Status: In progress

The survey to collect the information regarding coarse woody debris is conducted in conjunction with the waste and residue survey. The latter survey is only completed every two years, provided that waste levels are shown to be less than 1% of the Allowable Annual Cut in the waste and residue survey. Accordingly this objective does not show 2005 results. The results from 2004 have been left in this report for information purposes.

A method to measure coarse woody debris (CWD) was first implemented in the summer of 2001 (for the 2000/2001 timber year). Data was collected during the merchantable waste survey. It was determined later that surveyors incorrectly used CWD classes that did not correlate with the pre-harvest data collected. The CWD survey was conducted again in the summer of 2002 for the 2001/2002 timber year, using the appropriate protocols. Because this survey occurs in conjunction with the merchantable waste survey, data collection now occurs every second year commencing in 2002.

During the summer of 2004, coarse woody debris was measured in conjunction with the merchantable waste survey (for the 2003/2004 timber year). A report, entitled “Coarse Woody Debris: Survey Results”, was prepared by J.S. Thrower & Associates Ltd. and submitted to Canfor on January 25th, 2005. Table 15, below, summarizes the results.

Description	Target Result (m ³ /ha)	Actual Result (m ³ /ha)
Pre & Post Coarse Woody Debris	96.4	206.8

Table 15. Coarse Woody Debris Results

To describe the results, J.S. Thrower & Associates Ltd. indicates:

At the block (harvest area) level, there are four main contributors to the high post-harvest volume including:

- *Logging waste left on site;*
- *Existing CWD;*
- *Non-merchantable trees left in the setting;*
- *Undersize, merchantable species;*
- *Undersize, non-merchantable species;*
- *Merchantable size, non-merchantable species;*
- *Live and dead useless trees.*

Some possible explanations for a higher post-harvest CWD are:

- *A large number of trees were left on site following harvest;*
- *A block had a large amount of live and dead useless trees or a high amount of non-merchantable trees;*
- *Blocks were treated differently, such that they contribute more CWD. If many plots were located in these blocks, these higher plots will influence the overall average.”*

The report also indicates that the surveyors had a difficult time measuring the CWD that was in an advanced state of decay. This may distort some of the results.

The next survey is planned for the summer of 2006. That survey will be examined in light of the 2004 results to determine if the survey methodology needs modification.

Indicator (3b) 1.1c: Measure of site disturbance (i.e. ruts and roads)

<p>Objective (3b) 1.1c.1: To meet the Forest Soil Conservation Report Guidelines</p>	<p>Acceptable variance: Temporary roads, bared landing areas and displaced soil: if justified in the AOP process (eg. small block size, topography or in-block chipping operations) Rutting: Zero</p>
---	--

Status: Meets

The information for this objective is reported by timber year, not fiscal year.

Canfor’s new *Operating Ground Rules* (ASRD, 2005) specify that:

“9.04 Non-productive landbase created by timber harvesting operations shall not exceed five percent of each harvest area without prior approval of Alberta. Non-productive landbase is created by temporary roads, rutting, bared landing areas, displaced soil, and debris piles.

9.06 Not more than two percent of the harvest area shall be disturbed by ruts as measured by a linear transect system as defined in the Forest Soils Conservation Guidelines.”

According to the *Forest Soils Conservation Guidelines*, on a block-by-block basis, the 5% in-block road guideline can be exceeded if:

- *The cutblock is small (generally <10 ha);*
- *The cutblock is narrow in width;*
- *The terrain is quite steep (>20% slopes); or*
- *Additional decking room and truck turnarounds are needed.*

The following was reported in the 2005/2006 Annual Operating Plan:

“During the 2004 Harvest Season, 90 blocks on the FMA were harvested for a total area of 3,286 hectares. The total FMA road area was 104 ha. This resulted in 3.2% area in roads on the FMA for 2004. The targeted internal road allowance is 5% as per Operating Ground Rules. Harvest areas that exceed the 5% site disturbance allowance are often small blocks (<10ha) or have topography related issues like steep ground or narrow ridges. A total of 10 blocks exceeded the targeted 5% site disturbance in 2004.”

Table 16 lists the 10 blocks that exceeded the 5% target.

Harvest Area	Harvest Area (ha)	Road Length (m)	Road Area (ha)	%	Justification
G152446	40.3	4295.5	2.2	5.3	Block narrow & islands of wood
G241832	1.2	145.9	0.1	6.1	Block < 10 hectares
G241849	3.9	487.6	0.2	6.3	Block < 10 hectares
G242091	2.8	296.1	0.2	5.3	Block < 10 hectares
S190595	2.5	500.9	0.3	10.0	Block < 10 hectares
S191542	6.7	793.4	0.4	5.9	Block < 10 hectares
S222994	27.9	2891.6	1.4	5.1	Pipeline intersects block
W702666	3.7	709.3	0.3	8.9	Block < 10 hectares
S223402	1.4	148.2	0.1	5.3	Block < 10 hectares
W773424P	49.2	7019.5	2.7	5.5	Topography and high volumes

Table 16. Road Allowance Results

Rutting is assessed ocularly during harvest and silviculture inspections. Results for the 2004/2005-timber year show there was no rutting greater than 2%.

Value (3b) 2.: Soil Quality

Goal (3b) 2.1: Minimize soil erosion

Indicator (3b) 2.1a: Occurrence of slumping caused by road construction

<p>Objective (3b) 2.1a.1: To have zero slumping events from road construction activities in a given operating season</p>	<p>Acceptable variance: 2 slumps in an operating season</p>
---	--

Status: Meets

The information for this objective is reported by timber year not fiscal year.

Mass wasting within the FMA area is classified into 3 categories: road grade cut failures, minor slumps and major slumps. The following classification applies for the purposes of measuring and recording the areas affected by mass wasting:

- Road grade cut failures $\leq 100 \text{ m}^2$;
- Minor slumps affect $\leq 2500 \text{ m}^2$; and
- Major slumps affect $>2500 \text{ m}^2$.

Annual road inspections were conducted in 2005 for the 2004/2005 harvest season. The results indicate there was no new major, and only one minor slump caused by road construction in 2005.

Minor slumps identified or monitored in 2005 are as follows:

- Ridge Road (LOC 030770) TWP 60 RGE 4 W6M. Road constructed fall 2003.
 - Station 7+659, date of slump: 2004, size approximately 300 m^2 .
 - 2004 remediation efforts included reducing slope angle, removal of trees above slump and seeding. Will be monitored twice per year until stabilized.
 - 2005 additional movement of soil-will be cleaned and re-seeded and monitored in 2006.
- Norris Road (LOC 971399) TWP 59 RGE 5 W6M, road constructed in 1997.
 - Station 14+444, date of slump: 2000, size: 250 m^2 .
 - 2004 remediation efforts: removal of wasted material to re-establish ditchline, clean out culvert and seeding. Will be monitored twice per year until stabilized.
 - 2005 seed is establishing with minor creep noted. Continue to monitor in 2006.
 - Station 15+430, monitored since 2001, size: 200 m^2 .
 - A qualified professional visited the site in September 2001 and provided advice on how to mitigate the effects of the slump. An action plan has been developed and is being followed:
 - March 2002: the site was visited to ensure that the culvert was thawing properly;
 - Fall 2002: No problems noted;
 - June 2003: Situation stable, no new slumping;
 - September 2004: Site stable, no additional movement noted. Site to be re-inspected twice per year until stabilized; and
 - 2005 no additional movement noted. Continue to monitor in 2006.
- Waskahigan Mainline (LOC 1292) TWP 64 RGE 1 W6M. Road constructed 1970.
 - Station 0+506, date of slump 2004 and 2005, size: 200 m^2 .
 - Slump occurred in 2004 (Figure 10), creeping of soil in previous years.
 - Remediation in 2004 included installation of “weeping pipe” drain, sloping and compaction of site, seeding, ditching (Figure 11 & 12).
 - Site to be re-inspected twice per year until stable.
 - Site began slumping in similar manner fall 2005. Remediation is planned for 2006.
- Big Mountain One-Way (LOC 1206) TWP 70 RGE 5 W6M. Road constructed 1970’s.
 - Station 17+100, monitored since 1999.
 - Continues to be stable, will be monitored yearly.



Figure 10. Slump on Waskahigan Mainline



Figure 11. Remediation of Slump



Figure 12. Remediated Slump

Along with slumps, road grade cut failures (Table 17) are also tracked in Canfor’s Forest Roads Management System (FRMS-in Genus).

Road ID	Approximate Station	Area (m ²)
Canfor Mainline (2000 Road)	83+373	80
Canfor Mainline (2000 Road)	43+150	70
Lower Smoky Road	3+251	25
Lower Smoky Road	8+152	30
Lower Smoky Road	12+354	35
Lower Smoky Road	32+755	80
Lower Smoky Road	34+929	40
Lower Smoky Road	36+556	90
Camp 1 Road (7000 Rd)	0+452	20
Camp 1 Road (7000 Rd)	0+907	25
Camp 1 Road (7000 Rd)	5+044	50
Camp 1 Road (7000 Rd)	5+270	50
Norris Road	5+709	30
Norris Road	6+403	10
Norris Road	14+468	50
Ridge Road	5+470	50
Ridge Road	5+808	80
Ridge Road	6+353	90
Ridge Road	6+653	60
Bolton Mainline	3+815	20

Table 17. Annual Road Inspection 2003/2004 Harvest Season Results of Road Cut Failures

Indicator (3b) 2.1b: Number of locations that have slumped on sensitive or steep slopes due to harvesting

Objective (3b) 2.1b.1:

To have zero (major) slumping events due to harvesting activities on steep or sensitive slopes

Acceptable variance:

1 slump in an operating season

Status: Meets

The information for this objective is reported by timber year not fiscal year.

Aerial and ground surveys conducted in the 2004/2005 timber year, indicate there are zero reported slumps caused by harvesting on steep or sensitive sites.

Currently there is one minor slump in harvest area W73067 (TWP 62 RGE 27 W5M) that was previously reported in the May 1st, 2001 to April 30th, 2002 Annual Performance Monitoring Report (Figure 13).

- A qualified professional evaluated the site (Sept. 2001). Mitigative plans were recommended including grass seeding and monitoring.
 - Spring 2002: area had grassed in naturally, but additional grass seed was added to help stabilize the area.
 - Summer 2003: the grass seeding was doing very well, and the site was stable. No additional grass seeding was necessary.
 - Fall 2004: Inspected by Canfor staff and ASRD representative. Established with vegetation and no movement noted. Site stable.
 - 2005: No monitoring of this site was conducted.



Figure 13. Minor Slump in Harvest Area W73067

Critical Element 3c: Water Resources

Value (3c) 1.: Water quality and quantity

Goal (3c) 1.1: Conserve water quality and quantity

Indicator (3c) 1.1a: The amount of siltation caused by road construction in forestry operations

<p>Objective (3c) 1.1a.1: To assess current methodologies and practices to measure siltation caused by forest road construction</p>	<p>Acceptable variance: Zero in assessment of methodologies. The amount of acceptable variance will be determined once baseline data is collected and analyzed</p>
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Status: Meets

A process was initiated in 2003 to assess methodologies for evaluating the effects of forest roads on water quality. The goal was to develop a sustainable forest management (SFM) indicator that could be used to evaluate and document how well current erosion control practices are protecting water courses from accelerated delivery of fine sediment. To achieve this objective, the following three-phase adaptive management plan was designed:

- Phase I: Literature Review and Development of the Monitoring Program. This phase was completed in March of 2003 (Tyler and Muhlberger, 2003).
- Phase II: Pilot Project. This phase was initiated in the summer of 2003 and included field trials to test the applicability of the Stream Crossing Quality Index (SCQI) survey in west central Alberta. The work was conducted in several operational areas of FMA 9900037, including the E8 (Bolton Creek), Deep North and Simonette areas. Along with the field trials, this pilot project included a comprehensive report and a series of recommendations for:
 - Improving the SCQI survey methodology; and
 - Improving erosion and sediment control (ESC) practices.
- Phase III – Data Collection, Analyses and Reporting.

Phase III began in May 2004 with the planning of field work to objectively test and validate the SCQI methodology through a formal water quality monitoring program. This program was implemented in July 2004 using automated turbidity monitoring equipment in an upstream-downstream experimental design. Turbidity monitoring continued until freeze-up when the equipment was removed from the field (end of October 2004). The water quality monitoring identified some problems with the SCQI survey procedure when applied in areas with very fine textured soils. The SCQI procedure was subsequently revised and improved based on the initial water quality monitoring results. The Phase III program also included applying the revised SCQI procedure in different select regions of the FMA area to see how well it could be used operationally. Recommendations made to Canfor concerning the feasibility of the SCQI method as an SFM indicator for the protection of water quality are based on the integrated results of the 2004 SCQI surveys and the analyses of continuous turbidity data. The 2004 water quality monitoring program was implemented at five crossings within the area surveyed in 2003. Continuous turbidity data was collected upstream and downstream for each of the five crossings for a time spanning from July and to late October. Data from the upstream crossing is considered the “control” for the downstream site. The difference in turbidity between the upstream and downstream data is termed “induced turbidity”, and is normally attributed to suspended sediment generated by the stream crossing. This difference is then compared to the “predicted” outcome provided by the SCQI individual crossing score. A regression analysis is then used to determine how well the SCQI method is able to predict the actual measured level of induced turbidity.



Figure 14. Data Logger Housing



Figure 15. Turbidity Monitoring



Figure 16. Turbidity Monitoring

The data logger housing for the SCQI validation water quality program can be seen in Figure 14 to 16 show the probe casing (black ABS pipe) in the stream while the data logger (grey case) is bolted to the fence post on stream bank.

Although water quality monitoring successfully measured induced turbidity throughout the season at all five crossings, the monitoring sites that were selected were only able to represent crossings with a Water Quality Concern Ratings (WQCR) in the Medium, High and Very High categories.

Consistent with the adaptive management process, Phase III continued into 2005. An SCQI survey program was completed in the Economy North, Economy South, Simonette, and Puskwaskau operational units. Reassessments of select crossings in the Simonette, Deep North and E8 operational units were also completed to both revise crossing scores with the updated SCQI survey methodology and to evaluate remedial actions taken by Canfor to reduce the erosion and sediment delivery hazard at crossings that previously received “High” Water Quality Concern Ratings (WQCR).

The SCQI validation also continued in 2005 with water turbidity monitoring implemented at 7 crossings within the area surveyed in 2004 and 2005. Continuous turbidity data were collected upstream and downstream for each of the seven crossings for a time spanning from June to late-October.

Although the initial objective was to monitor stream crossings that represented the “Low” WQCR class, the monitoring sites that were selected only represented crossings in the Moderate and Very High classes (Table 18). This was because of the combination of two reasons: (1) relatively few crossings in the FMA area are Low hazards to water quality and (2) the crossings that are rated as Low WQCR are not easily accessible and do not meet the criteria necessary for monitoring purposes. Site LB025 was monitored in an attempt to collect turbidity data for a crossing rated as Low using the SCQI, but the data collected here were inconclusive due to the persistence of extraneous noise. The remaining 6 monitoring sites yielded good data and the averages are provided in Figure 17. The graph in Figure 17 shows that the crossings monitored in 2005 fit into the WQCR categories (i.e., Table 18 and Figure 17 coloured boxes) that were predicted using the SCQI method, with the exception of site LC002. Further analysis of LC002 revealed that the effectiveness of the grass buffer between the road surface and the stream may have been overestimated. The SCQI score would have matched the monitoring data had the delivery been assessed as being more directly linked to the stream. Overall, Figure 17 confirms the ability of the SCQI procedure to predict the hazard class associated with increased turbidity generated by the stream crossing at the time of the SCQI survey (i.e., the erosion and sediment delivery hazard levels may change over time as natural restoration occurs or if erosion and sediment control measures are implemented).

SCQI Score	Water Quality Concern Rating (WQCR)
<0.1	None
0.1 < score < 0.4	Low
0.4 ≤ score ≤ 0.8	Moderate
0.8 ≤ score ≤ 1.6	High
> 1.6	Very High

Table 18. Relationship Between SCQI individual crossing score and WQCR

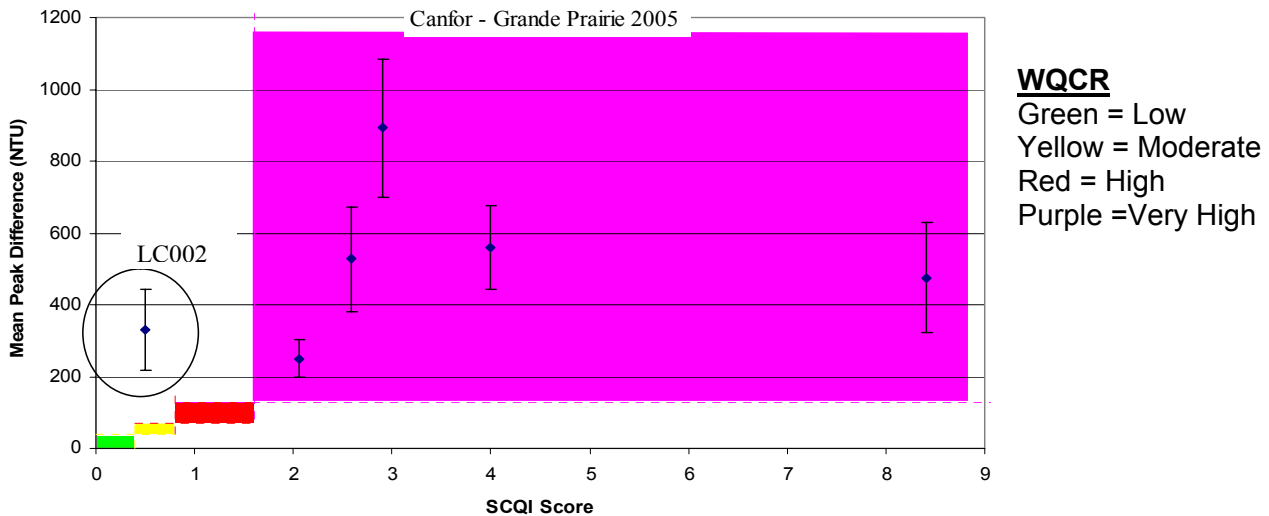


Figure 17. The Relationship Between the Average Difference in Maximum Value Measured Between the Upstream and Downstream Monitoring Sites (i.e., Induced Turbidity) Over All the Events Analyzed for Each Crossing in 2005 and the Assessed SCQI Score.

A total of 83 stream crossings in the Economy North, Economy South, Simonette, and Puskwaskau operational units received their first SCQI survey in 2005, of which 58.3 % received a WQCR of High or Very High (Table 19). The majority of High and Very High WQCRs were found on roads with high traffic and regular maintenance.

Operational Unit	# of Crossings Surveyed	None		Low		Moderate		High		Very High	
		#	%	#	%	#	%	#	%	#	%
Economy North	25	6	24.0	0	0.0	0	0.0	7	28.0	12	48.0
Economy South	39	2	5.2	6	15.3	8	20.5	9	23.2	14	35.8
Simonette	8	8	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Puskwaskau	11	3	27.3	0	0.0	2	18.2	2	18.2	4	36.3
2005 Areas Cumulative	83	19	23.2	6	6.4	10	12.1	18	21.9	4	36.3

Table 19. Summary of 2005 SCQI Survey Results

Thirty-two crossings in total were reassessed during the 2005 season (Table 20), 21 of these crossings were revisited because the WQCR could not be interpolated from the existing data after improvements were made to the SCQI methodology in 2004. At crossings with large sediment sources that received a WQCR of “Low” or “None” during the 2003 survey, the delivery potential had generally, been underestimated and this is reflected in the results of the 2005 reassessment.

Eleven of the crossings were reassessed because remedial actions were taken to improve the WQCR assigned during the 2003 survey. Although the WQCR was not always improved, the state of the crossing had improved in nearly every case. A more aggressive approach to re-establishing full vegetation cover and reducing the erosion potential is necessary before the WQCR will decrease into the “Moderate” or “Low” level.

WQCR	Reason For Reassessment			
	Revised SCQI Method		Remedial Actions Implemented	
	2003	2005	2003	2005
None	5	0	0	0
Low	11	1	0	1
Moderate	4	3	1	2
High	0	4	2	2
Very High	1	13	8	6

Table 20. Summary of Crossings Reassessed In 2005

Planned work for 2006 includes the development of a training manual and field guide. A one-day training session will be conducted consisting of ½ day of classroom introduction and ½ day field session to gain hands-on experience with the SCQI methodology. Intended participants are Canfor staff from Grande Prairie and other divisions, road maintenance contractors, and energy sector representatives.

Indicator (3c) 1.1b: The level of response to identified problems regarding siltation

<p>Objective (3c) 1.1b.1: To track mitigative efforts made in response to siltation events found during annual road maintenance inspections</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

Prior to the SCQI method of rating sedimentation delivery potential, siltation events were noted during the annual road maintenance inspection and mitigative efforts were scheduled in the Annual Road Maintenance Plan. Examples include:

- On LOC 3735 (TWP 62 RGE 3 W6M) geotextile (coco) matting, silt fence and grass seed were used for bank stabilization during bridge installation (Figures 18 and 19).
- Norton Creek Road at Km 3126 (TWP 62 RGE 1 W6M) a ‘cattle guard’ was installed to divert water off of the road running surface into the ditch where settling ponds were located to trap sediment from the runoff.
- On LOC 3735 (NW28-61-03-W6M) silt fence, coco-matting, grass seed, rip rap, and tracking were used to control erosion and to encourage the establishment of vegetation.



Figure 18. Use of Coco-Matting and Silt Fencing



Figure 19. Use of Coco-Matting and Silt Fencing

Future siltation events observed during either the SCQI inspection or any other inspections that result in mitigative action, will be tracked in Canfor’s Forestry Road Maintenance System (FRMS-in Genus), as well as entered into the Annual Road Maintenance Plan.

Indicator (3c) 1.1c: Amount of forest cover (i.e. buffer zones) along watercourses (in the watershed)

<p>Objective (3c) 1.1c.1: To manage forest cover along watercourses to meet objectives defined in DFMP</p>	<p>Acceptable variance: Zero within regards to harvesting within buffered watercourses, as identified within approved operational plans</p>
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Status: Meets

There were no incidents of harvesting within buffered watercourses. Any deviations to the ground rules were noted in the Annual Operating Plan (AOP) and approved by ASRD. A comparison of planned versus actual buffered watercourses was conducted (Table 21). In the Detailed Forest Management Plan (DFMP) a total of 37,398 ha were designated on the timber harvest landbase for watercourse buffering. A GIS spatial overlay of the 2005 AOP onto the timber harvest landbase was conducted and the results show that there were an additional 4,328 ha identified over and above what the DFMP designated. This demonstrates that the forest cover along watercourses is being maintained.

Year	DFMP Buffer Area (ha)	Additional Area Buffered in the AOP (ha)	Total Area in Buffers (ha)
2004	37,398.0	4,286	41,684
2005	37,398.0	4,328	41,726

Table 21. DFMP Buffer Area Versus AOP Buffer Area

Indicator (3c) 1.1d: Number of incidents of excursions of herbicide

Objective (3c) 1.1d.1: To have zero excursions of herbicide in water	Acceptable variance: Zero
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Status: Does Not Meet

In 2005, 100% of the harvest areas treated in the 2004 herbicide program were flown to assess off target areas (OTA) (excursions), of the 2004 herbicide spray program. In total there were three instances (Table 22) of which one was a single spray swath through an open body of water in harvest area S27005. The area affected was approximately 150 m² and the probable cause was attributed to confusing bag lines.

To help prevent future occurrences of this nature, Canfor will be investigating the use of SMART boom technology where the creeks and boundaries are in the helicopter navigation system and a warning sounds to alert the pilot to an up coming sensitivity. No decision has been made at the time of writing as to the feasibility of using this system for the 2006 spray program.

Harvest Area	OTA Type	OTA Size	Probable cause
S261014	No-deposit zone violation	~10-15 m ²	Pilot error
S27005	Direct overspray of an open body of water	~150 m ²	Confusing baglines
P34081	Spray in an unapproved harvest area	~ 0.37 ha	Pilot error

Table 22. Herbicide Excursions

As a comparison, in 2004, 35% of the harvest areas were flown and the results revealed 6 herbicide excursions; which was down from 8 in 2003. None of the excursions were in water or riparian areas.

All excursions are recorded as non-compliances/non-conformances in Canfor’s Incident Tracking System (ITS) and reported to ASRD. The excursions noted in Table 22 were recorded in the ITS as number: ITS-GP2005-CM0007. An example of one of the excursions can be seen in Figure 20.



Figure 20. Herbicide OTA (Excursion)



Value (3c) 2.: Water cycle

Goal (3c) 2.1: Minimize the effect of the removal of forest cover on the water cycle

Indicator (3c).1a: Amount of forest cover removed and its spatial distribution within the watershed

Objective (3c) 2.1a.1:

To not exceed a range of 20-40% of forest cover removal, above the "H60" line, in relationship to the total vegetated area within a defined watershed as per the DFMP

Acceptable variance:

Not to exceed 35% Equivalent Clearcut Area (ECA) in the Bull Trout area, and 40% in the remaining area

Status: Meets

Canfor has completed the process of developing a DFMP/AOP Validation Process with Timberline Forest Inventory Consultants, which enables Canfor to track and report the amount of forest cover removed above the H60 line.

Canfor verifies the watersheds that are exceeding the targets each year. The results of the ECA in the bull trout area can be found in Objective (1b) 1.1b.2. Of all watersheds outside of the bull trout area, none exceed the 40% acceptable variance.

6. Criterion 4: Forest Ecosystem Contributions to Global Ecological Cycles

Critical Element 4a: Global Ecological Cycles

Value (4a) 1.: Local contribution to global ecological cycles

Goal (4a) 1.1: Minimize disturbances that negatively impact carbon cycles

Indicator (4a) 1.1a: Amount of area under forest cover

<p>Objective (4a) 1.1a.1: All harvested sites are treated within 18 months after the end of the timber year</p>	<p>Acceptable variance: A variance of +3 months is acceptable in order to accommodate the occurrence of fire and periods of extreme weather conditions including floods and drought</p>
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Status: Meets

Repeat objective. Refer to Objective (2b) 1.1c.1.

Indicator (4a) 1.1b: Number of occurrences and amount of area impacted by fire and catastrophic events of insects, disease, windfall, etc.

<p>Objective (4a) 1.1b.1: Limit the number of occurrences and amount of area impacted by fire and catastrophic events of insects, disease, windfall, etc.</p>	<p>Acceptable variance: For Company caused fires: zero For catastrophic events of insects, disease, windfall within the FMA area: zero</p>
--	---

Status: Meets

Repeat objective. Refer to Objective (2a) 1.1a.1.

Indicator (4a) 1.1c: The numbers of equipment in use and amount of technology with low carbon dioxide (CO₂) and nitrogen oxides (NO_x) emissions

<p>Objective (4a) 1.1c.1: To promote use of equipment and technology that minimizes CO₂ and NO_x emissions</p>	<p>Acceptable variance: Not know to date</p>
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Status: Meets

In the last reporting period, Canfor commissioned a report “*Investigative Report Addressing Carbon Dioxide (CO₂) and Nitrogen Oxides (NO_x) Emissions*” that addresses alternate equipment and technology to help reduce carbon emissions. This information was shared with all of Canfor’s contractors to encourage them to utilize low CO₂ emission technology.

The following clause was inserted in all harvesting and hauling contracts for the 2004/2005-timber year:

1. The contractor will report the following to Canfor:
 - 1.1. The amount and type of fuel used by each major machine type, namely:
 - 1.1.1. feller/bunchers;
 - 1.1.2. skidders;
 - 1.1.3. processors;
 - 1.1.4. other heavy equipment;
 - 1.1.5. light vehicles; and
 - 1.1.6. camp fuel use.

This data was compiled in 2005 and baseline values have been established for fuel emissions. Baseline values are seen in Table 23.

Table 23 shows a comparison between values generated in a study performed by the Forest Engineering Research Institute of Canada (FERIC) and the values that Canfor generated using the Canadian Diesel Fuel Standards emissions values (per Canfor memo). Unfortunately the two are not directly comparable since the FERIC information covers all of the fuel consumed to produce the volume. The Canfor data utilizes just the fuel consumed by the contractors involved in harvesting, road building, loading and hauling.

FERIC Advantage Report (Vol. 3, No. 29, 2002)				CO ₂ (Kg)	N ₂ O (Kg)	Volume Harvested 2004/2005 (m ³)	CO ₂ (Kg/m ³)	N ₂ O (Kg/m ³)
Pre Harvest, Logging, Camp & Silviculture				3,855,951	864.1	411,477	9.4	0.002
Hauling (106 Km)				4,018,073	864.1	411,477	9.8	0.002
Total				7,874,024	1,728.2	411,477	19.1	0.004
Canadian Diesel Fuel Standards				CO ₂ (Kg)	N ₂ O (Kg)	Volume Harvested 2004/2005 (m ³)	CO ₂ (Kg/m ³)	N ₂ O (Kg/m ³)
Logging & Camp	Fuel (L)	CO ₂ (Kg/L)	N ₂ O (Kg/L)	2,930,924	20,817.7	411,477	7.1	0.051
Hauling	1,144,534	2.8	0.02	3,222,779	22,890.7	411,477	7.8	0.056
Total	2,185,419			6,153,703	43,708.4	411,477	14.9	0.106

Table 23. Comparison of CO₂ and N₂O Values

For 2006, Canfor will change tactics and utilize FERIC research to show how new engines will produce less emission over older engines.

Goal (4a) 1.2: Minimize disturbances that negatively impact water cycles

Indicator (4a) 1.2a: Amount of forest cover removed and it's spatial distribution within a defined watershed

<p>Objective (4a) 1.2a.1: To not exceed a range of 20-40% of forest cover removal, above the "H60" line, in relationship to the total vegetated area within a defined watershed as per the DFMP</p>	<p>Acceptable variance: Not to exceed 35% Equivalent Clearcut Area (ECA) in the Bull Trout area, and 40% in the remaining area</p>
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Status: Meets

Repeat objective. Refer to Objective (3c) 2.1a.1.

Goal (4a) 1.3: Minimize disturbances that negatively impact nitrogen cycles

Indicator (4a) 1.3a: Amount of forest coarse and fine woody debris on site, post harvesting

<p>Objective (4a) 1.3a.1: To develop a methodology to measure coarse woody debris on site, post harvesting</p>	<p>Acceptable variance: On average, no less than 90% of the pre-harvest CWD (coarse woody debris) left on site</p>
---	---

Status: Meets

Repeat objective. Refer to Objective (3b) 1.1b.1.

Indicator (4a) 1.3b: Presence of vascular plant species that can be used to indicate potential nitrogen levels

<p>Objective (4a) 1.3b.1: To understand, through modeling, the role of vascular plants as indicators of potential nitrogen levels</p>	<p>Acceptable variance: Not applicable</p>
--	---

Status: Complete

In 2001, Geographic Dynamics Corp prepared a report titled, “Role of Vascular Plants as Indicators of Potential Nitrogen Levels in Canfor Grande Prairie’s FMA Area”, which was acknowledged in the May 1st, 2001-April 30th, 2002 report. In that reporting period it was stated that a further literature review was required. Canfor retained Incremental Forest Technologies Ltd. to evaluate the need for an additional nutrient monitoring project. After meetings at the U of A with Dr. Pluth and Dr. Takyi, it was decided that further research was impractical. A literature search was also conducted by Incremental Forest Technologies Ltd. that concluded there are sufficient manuscripts regarding this topic and no additional nutrient monitoring is necessary. Therefore, this objective is complete.

Critical Element 4b: Utilization and Rejuvenation are Balanced and Sustained

Value (4b) 1.: Sustained yield of timber

Goal (4b) 1.1: Maintain harvest level related to AAC as defined in the DFMP

Indicator (4b) 1.1a: The amount harvested versus the approved AAC

<p>Objective (4b) 1.1a.1: Operational practices meet the DFMP management strategies that make up the AAC</p>	<p>Acceptable variance: Any variances identified operationally will be evaluated to ensure that the management strategies are still being met.</p>
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Status: Does not meet

The DFMP was approved November 3rd, 2003 and it indicates all operational practices will follow the DFMP management strategies for establishing the Annual Allowable Cut (AAC).

Annually, in Canfor's Annual Operating Plan (AOP), a validation table is developed to evaluate and compare the DFMP sequenced stand areas to the AOP laid out areas. This comparison ensures operational planning practices coincide with DFMP management strategies. The variance target is to be within +/- 20% of the DFMP. Table 24 was derived from the validation table developed for the 2005 AOP for all harvest areas currently planned. The 2005 AOP, including the validation table, was approved by ASRD on Aug 9th, 2005.

In February 2005, a decision was made to defer logging in the Caribou area compartment (DS-2) due to public concern for the Little Smoky caribou herd, and to provide sufficient time for the Alberta Government to approve and implement the Alberta Woodland Caribou Recovery Plan (ASRD, 2004). This affected the harvest sequence and therefore a compartment assessment for a new operating area was completed as per the Operating Ground Rules (ASRD, 2005) requirement. The area that Canfor

was approved to replace the harvesting in DS-2 with was DN-2 and DN-4. DFMP objective analyses were completed to ensure other values, such as watersheds, were not compromised. The values were met; however the variance to the sequence in DN-2 exceeded +/-20% variance (Table 24).

As well, Table 24 indicates that Pusk-4 (-26%) does not meet the +/-20% variance. This area will be re-evaluated in 2006.

Operational Sub-Unit	% Variance
DN-2	96
DN-4	-7
PUSK-4	-26

Table 24. Variation Between DFMP Planned and AOP Actual Laid Out Harvest

Goal (4b) 1.2: To reforest every hectare harvested

Indicator (4b) 1.2a: The amount of harvested area in the regenerated yield group

<p>Objective (4b) 1.2a.1: To regenerate 100% of the harvested area as per the regenerated yield group as defined in the DFMP</p>	<p>Acceptable variance: +/-10% of the area of regenerated yield groups and +/-5% of the AAC for C, CD, DC & D provided that the overall AAC for both coniferous and deciduous are sustained (within -5%)</p>
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Status: Does not meet

Repeat objective. Refer to Objective (2b) 1.1a.1.

Indicator (4b) 1.2b: Total area harvested annually compared to total area reforested (planting or seeding)

<p>Objective (4b) 1.2b.1: All harvested sites are treated within 18 months after the end of the timber year</p>	<p>Acceptable variance: A variance of +3 months is acceptable in order to accommodate the occurrence of fire and periods of extreme weather conditions including floods and drought</p>
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Status: Meets

Repeat objective. Refer to Objective (2b) 1.1c.1.

Goal (4b) 1.2: Maximize utilization of merchantable wood

Indicator (4b) 1.3a: Amount of merchantable wood (m³) left on site

<p>Objective (4b) 1.3a.1: To leave less than 1% of merchantable wood on site</p>	<p>Acceptable variance: Will not exceed 1%</p>
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Status: Meets

Waste surveys are conducted every second year. The results from the survey in 2004 indicate the average merchantable waste was 0.84% for coniferous and 0.75% for deciduous. The range for coniferous merchantable waste was 0.36% to 1.44% while deciduous ranged from 0.12% to 2.60%.

The next waste survey is scheduled for 2006, however the results from 2004 are provided for information (Figure 21).

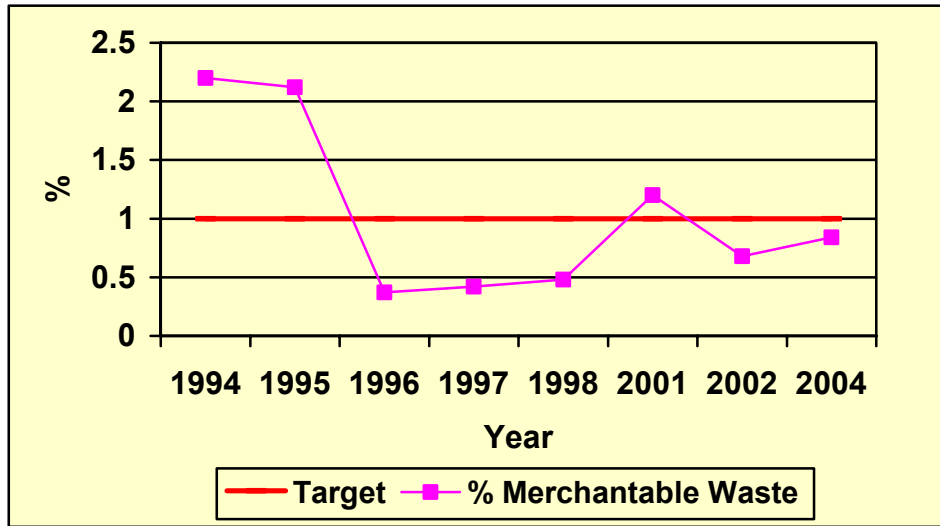


Figure 21. Merchantable Waste Survey Results (1994 to Present)

Indicator (4b) 1.3b: Amount of accessible merchantable industrial salvaged wood brought in on an annual basis

<p>Objective (4b) 1.3b.1: To utilize 100% of accessible merchantable industrial salvaged wood from permanent land withdrawals</p>	<p>Acceptable variance: Inherent level of variability</p>
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

Each request for withdrawal received by Canfor is reviewed and if approved, a coniferous salvage commitment form is signed. As per the form, notification must be provided to Canfor as soon as the salvage is ready to haul. A land use database is used to track a number of salvage components to ensure that all available salvage wood is hauled to the mill site.

100% of the merchantable coniferous industrial salvage reported to Canfor, has been tracked and hauled into the mill site for 2005 (Table 25).

Timber Year (May 1 – April 30)	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005
Volume of Salvage Wood (m ³)	25,166*	14,480	8,440	4,418	16,943	9,541

* Volume indicated is higher than average due to the removal of forest cover for the Alliance Pipeline project in the FMA area

Table 25. Coniferous Salvage Wood Volume

Critical Element 4c: Protection of Forest Lands

Value (4c) 1.: Forests on the landbase

Goal (4c) 1.1: Maintain forests on the landbase

Indicator (4c) 1.1a: The amount of productive area Canfor utilizes for future permanent roads (LOC)

<p>Objective (4c) 1.1a.1: To have less than 2% of productive area in Canfor's future permanent roads (LOC)</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

Repeat objective. Refer to Objective (3a) 1.1a.1.

Indicator (4c) 1.1b: The amount in each seral stage at present and key points in time

<p>Objective (4c) 1.1b.1: Maintain seral stages within the natural disturbance regimes at present and key points in time</p>	<p>Acceptable variance: To be within the range of the natural disturbance regimes for seral stages in the FMA area and FMUs</p>
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Status: Not scheduled reporting time.

Repeat objective. Refer to Objective (1a) 1.2b.1.

Indicator (4c) 1.1c: The amount of area identified as low productive sites

<p>Objective (4c) 1.1c.1: Designate all low productive yield groups as no harvest zones, subject to operational verification</p>	<p>Acceptable variance: No low productive sites (yield group 13) will be scheduled for harvesting after operational verification</p>
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

After superimposing all harvested areas for the 2004/2005 timber year onto the Alberta Vegetation Inventory (AVI) it was determined that 9 of the 97 harvested areas (Table 26) showed overlap between harvested area and yield group 13. All of these areas were polygon slivers comprised of fringe types harvested within the harvest area or a forest cover type that was misclassified as yield group 13.

W740571 was the only harvest area that had an appreciable amount of the original yield group 13. After field verification, it was reclassified to yield group 12. The area that was harvested was a finger of mistyped yield group 13 and was an open area with some merchantable black spruce and pine type within

	Area Harvested Overlapping Yield Group 13 (ha)
W740571	1.5
G151927	0.3
G231389	0.4
G231468	0.1
G240322	0.2
P330389	0.1
S131994	0.1
S190656	0.3
W702718	0.1
Total	3.3

Table 26. Harvest Area with Overlapping Yield Group 13

In 2005, a total of 0.1% of the area harvested showed overlap with yield group 13 (Table 27). All of these areas were polygon slivers or forest cover types misclassified as yield group 13.

Harvest Season	Total Area Harvested (ha)	Total Original AVI Forest Cover Yield Group 13 (ha)	Percent of Total Area Harvested Overlapping Yield Group 13 (%)
2002/2003	2,774.0	7.5	0.3%
2003/2004	2,808.9	4.9	0.2%
2004/2005	3,608.3	3.3	0.1%

Table 27. Percentage of Total Area Overlapping Yield Group 13

Objective (4c) 1.1c.2: Delineate all low productive sites (>1 ha) within harvest areas as “no harvest zones”	Acceptable variance: Zero
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

Canfor delineates all low productive sites (yield group 13) >1 ha from the harvest areas as ‘no harvest zones’. Of the 97 areas harvested in 2004/05 timber year, 3 contained low productive sites ranging from 1.2 to 4.0 ha in size (Table 28). Of the 3 harvest areas, all contained sites >1 ha and they have the appropriate no harvest zone applied in the field.

Harvest Area	Original AVI Forest Cover Yield group 13 (ha)
S122505	1.2
S122574	4.0
S131994	1.4
Total	5.6

Table 28. Harvest Areas Containing Yield Group 13

Goal (4c) 1.2: Productive lands are restored to productive status

Indicator (4c) 1.2a: The amount of productive area regenerated (excluding cut units)

Objective (4c) 1.2a.1: Track amount of previously withdrawn areas brought back into productive status	Acceptable variance: Zero
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Status: Meets

All previously withdrawn areas that are brought back to productive status are tracked in GENUS.(Table 29). In 2005, 2 wellsites (2.3 ha) were planted. In 2006, 7 locations planned for a total of 92.3 ha.

Year	Hectares of Wellsites/Roads/Seismic Lines Planted (ha)
1999	13.0
2000	0
2001	19.1
2002	57.9
2003	0
2004	0
2005	2.3
Total	92.3

Table 29. Previously Withdrawn Areas Reforested

<p>Objective (4c) 1.2a.2: Track burned areas to ensure that they have been regenerated (with preference to natural regeneration)</p>	<p>Acceptable variance: To track regeneration success on fires >4 ha</p>
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Status: Meets

Burned areas greater than >4 ha are tracked in Canfor's block tracking database (Genus) along with the associated regeneration information. Since 2002 there have been no fires >4 ha.

All burned areas>4ha have been planted to date. Regeneration success will be reported as the surveys are completed over the next few years.

Goal (4c) 1.3: Minimize the loss of forest on the landbase due to access

Indicator (4c) 1.3a: Degree of access integration

<p>Objective (4c) 1.3a.1: To maximize and promote shared access by all resource users</p>	<p>Acceptable variance: Not applicable</p>
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Status: Meets

Canfor actively works with the energy sector to share access through road use agreements and utilizing existing seismic lines as much as possible for new road construction. Examples are:

Canfor actively works with the energy sector to share access through road use agreements and utilizing existing seismic lines as much as possible for new road construction. Examples are:

- **Canfor/Suncor Energy Ltd.** - To avoid the need for "new" construction, Canfor's assigned four of Canfor's LOCs to Suncor access into its fields located in the Deep Valley Creek area: LOC 791358 (6.2 km), LOC 821100 (3.5 km), LOC 821101 (6.6 km) and LOC 930667 (0.3 km). In addition, Suncor has agreed to use gravel from Canfor's gravel pit located at Km 4145 rather than excavating its own gravel pit.

- **Canfor/RSX Energy Ltd.** - At Canfor's request, RSX Energy Ltd. agreed to re-route its proposed access road to use an existing LOC and Mineral Surface Lease (MSL) for its access to MSL 056511/LOC 054561, avoiding 0.37 ha of new cut.
- **Canfor/Progress Energy Ltd.** - At Canfor's suggestion, Progress Energy Ltd. and Canfor are jointly reforesting 7 wellsites located in Township 67 Range 1 W6M.

In November 2005, Canfor also signed a Letter of Agreement with Suncor Energy Ltd. that increases collaboration of activities and reduces cumulative impact on the landbase. Some of the key topics of interest within the agreement are:

- Planning document review;
- Access management;
- Caribou Restoration Pilot Project;
- Stream crossing monitoring;
- Archaeological and heritage site management;
- Emergency response plans;
- Data sharing; and
- Fire protection.

Similar agreements with other oil and gas companies are also being negotiated.

7. Criterion 5: Multiple Benefits to Society

Critical Element 5a: Extraction Rates are Within the Long-Term Productive Capacity of the Resource Base

Value (5a) 1.: Sustainable yield of timber

Goal (5a) 1.1: Maintain sustainable harvest levels on the FMA

Indicator (5a) 1.1a: Long-term harvest levels vs actual extraction rates as per the DFMP

<p>Objective (5a) 1.1a.1: To harvest at levels less than or equal to the long-term level</p>	<p>Acceptable variance: In any year, the harvest level can vary as long as the total amount harvested in established 5-year periods (cut control) does not exceed 5% of the total approved AAC</p>
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

Canfor's first 5-year cut control period for the new DFMP began in 1999/2000 and ended in 2003/04. However, because the DFMP was not approved until November 2003 (the last year of the first 5-year cut control period), Alberta Sustainable Resource Development (ASRD) approved balancing to a 10-year cut control period as opposed to five years.

The approved long-term harvest level for the Forest Management Agreement (FMA) area is 630,400 m³ for coniferous and 451,726 m³ for deciduous, both of which include an average salvage drain (timber removal from the energy industry). Because the salvage drain is variable year-to-year, the DFMP long-term harvest level (which does not include the drain) of 640,000 m³ (coniferous) and 453,712 m³ (deciduous) is used and is balanced with the actual salvage drain numbers (included in the harvested volume).

Tables 30 and 31 show that the total harvesting volumes for both coniferous and deciduous are below the long-term harvest levels.

Timber Year	Harvested (m ³)	Long-Term Harvest Level (m ³)	Variance (m ³)	Variance (%)
1999/2000	555,338*	640,000	-84,662	-13.2
2000/2001	644,861*	640,000	4,861	0.8
2001/2002	579,280*	640,000	-60,720	-9.5
2002/2003	626,525*	640,000	-13,475	-2.1
2003/2004	662,790*	640,000	22,790	3.6
2004/2005	443,581	640,000	-196,419	-30.7
Total	3,512,375	3,840,000	-327,625	-8.5

* The harvested volumes were reconciled in 2005 and the numbers have changed slightly from the previous report

Table 30. Actual Coniferous Harvest Volume Per Timber Year Versus Long Term Harvest Level

Timber Year	Harvested (m ³)	Long-Term Harvest Level (m ³)	Variance (m ³)	Variance (%)
1999/2000	166,387	226,312*	-59,925	--26.5
2000/2001	230,148	226,312*	3,836	1.7
2001/2002	180,024	226,312*	-46,288	-20.5
2002/2003	160,610	226,312*	-65,702	-29.0
2003/2004	146,045	226,312*	-80,267	-35.5
2004/2005	210,196	226,312*	-16,116	-7.1
Total	981,235	1,357,872	-264,462	-19.5

*Although the long term harvest levels for deciduous are approved in the DFMP at 453,712 m³, only the ASRD finalized deciduous allocations are reported to date showing the deciduous long-term harvest level shows as 226,312 m³.

Table 31. Actual Deciduous Harvest Volume Per Timber Year Versus Long Term harvest Level

Critical Element 5b: Resource Businesses Exist Within a Fair and Competitive Investment and Operating Climate

Value (5b) 1.: Economic benefit to local communities

Goal (5b) 1.1: Local communities and contractors have the opportunity to share in benefits such as jobs, contracts and services

Indicator (5b) 1.1a: The economic contribution that Canfor Grande Prairie Operations makes to local communities and contractors

<p>Objective (5b) 1.1a.1: To maintain Canfor's contribution to local communities and contractors</p>	<p>Acceptable variance: To maintain Canfor's contribution to local communities in relation to the prevailing economic climate</p>
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Status: Meets

Canfor contributes to the local economy in the form of wages and benefits, property taxes, purchases of goods and services and community donations (Table 32). In 2005, Canfor's total contribution decreased from 2004 by approximately 3.5 million dollars, for the most part due to the decreased stumpage cost.

Contribution	Amount (\$Millions)					
	2000	2001	2002	2003	2004	2005
Property Tax	0.7	0.8	0.8	0.8	0.9	0.9
Salary Wages	11.6	12.0	13.5	14.6	14.7	15.0
Contract services Local ¹	24.8	25.3	29.0	34.6	36.9	38.1
Contract services Non-Local ¹	6.9	7.0	7.2	8.6	8.1	7.3
Supplies	5.0	5.6	4.4	5.5	6.0	6.4
Energy	2.3	6.8	4.2	4.0	4.4	3.6
Stumpage	2.3	4.6	3.0	2.9	7.9	4.2
Community Donations	0.1	0.1	0.1	0.1	0.1	0.1
TOTAL	53.8	62.1	62.3	70.2	79.0	75.6
<p>Notes: ¹ Canfor's accounting ledger currently does not distinguish between local and non-local contractors. However, an estimate of the local versus the non-local has been determined.</p>						

Table 32. Key Contributions to the Local Community

Indicator (5b) 1.1b: The financial commitments as stated in Section 33, facility operation and FMA renewal commitments, of the Forest Management Agreement 9900037 are met

<p>Objective (5b) 1.1b.1: Within 60 months of the signed Forest Management Agreement 9900037, the Company shall upgrade its sawmill and fingerjoint as per Section 33 of the Forest Management Agreement 9900037</p>	<p>Acceptable variance: Zero, unless mutually agreed to by both Canfor and Alberta Sustainable Resource Development</p>
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Status: Complete

The Forest Management Agreement 9900037 was signed in May 1999. Modernization of the sawmill was completed in 2000 and additional upgrades to the sawmill, planer and fingerjoint facilities were completed during the period 2000 to 2004. These improvements have resulted in significant



improvements in terms of fibre utilization, grade recovery and productivity. Major improvements were also undertaken at the lumber reload facility in Edmonton in 1999 and 2000. In total, the company invested \$32.823 million in their Alberta facilities within 60 months of the signing of the FMA. In a letter dated May 21st, 2004, the Honourable Mike Cardinal, Minister of Alberta Sustainable Resource Development confirmed that the company had fulfilled it's obligations under section 33(2)(b) of the agreement.

Objective (5b) 1.1b.2: To submit to the Minister for approval, a forestry project, in accordance with Section 33 subparagraph 4 of the Forest Management Agreement 9900037	Acceptable variance: Zero
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Status: In progress

“(4) No later than the tenth anniversary of the commencement date of this Agreement, the Company shall submit to the Minister a proposal for a forest industry project (the “forest project”), including an implementation timetable, that is acceptable to the Minister”

By way of letter dated March 23rd, 2001, Canfor advised the Honourable Mike Cardinal, Minister of Sustainable Resource Development of its intentions, in partnership with Canadian Gas and Electric Inc., to construct a wood residue fired power co-generation facility immediately adjacent to the Grande Prairie sawmill. The Minister acknowledged the partnership and commended the company's progress in a letter dated May 14th, 2001. Construction of the facility began shortly thereafter.

On June 21st, 2005 Canadian Gas and Electric Inc. declared Notice of Commercial Operations for the Grande Prairie EcoPower Centre, thereby indicating the facility was fully operational. Through the partnership with Canfor, wood waste provided from the Grande Prairie sawmill, and other local forest products manufacturing facilities is converted to electrical power for the Alberta grid and steam for Canfor's lumber drying kilns. The facility has also enabled the discontinuation of the Canfor waste incinerator, thereby improving airshed quality in Grande Prairie.

Canfor advised the Honourable David Coutts, Minister of Sustainable Resource Development in a letter dated July 8th, 2005 that the co-generation facility was operational, and that Canfor considered its obligations under Section 33(4) of the FMA to be accomplished. The Minister replied in an August 8th, 2005 letter that he had instructed department staff to undertake a verification of the suitability of the project with respect to the intentions of Section 33(4). Subsequent discussions between Canfor and senior department staff have been held regarding potential application of other Canfor initiatives to meet the intent of the agreement, particularly in the area of secondary manufacturing. Opportunities for Canfor to strengthen relationships with the secondary manufacturing industry in Alberta are currently being investigated.

Critical Element 5c: Forest Provide a Mix of Market and Non-Market Goods and Services

Value (5c) 1.: Multiple benefits from forests

Goal (5c) 1.1: Maintain the opportunity for others to use the forest for market and non-market goods and services

Indicator (5c) 1.1a: Amount of coniferous timber available to locals

Objective (5c) 1.1a.1: 0.5% of the conifer AAC is made available for local use	Acceptable variance: Zero
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

In accordance with the Forest Management Agreement (FMA), paragraph 8(d), 0.5% of the AAC (3,152 m³) is made available for “local use in construction and maintenance of public works by any local authority, municipality, county, the Crown in the Right of Alberta or Canada and for local residents.” These programs are administered through Alberta Sustainable Resource Development (ASRD) and are subject to government regulations.

Canfor and ASRD worked cooperatively to identify areas for this program. There have been a total of 19 coniferous permits issued since 1999 (Table 33). The volume does not always get harvested and hauled in the same year as issued therefore there are variances by year.

Timber Year Issued	# of Permits Issued	Volume (m3)
1999/2000	6	300
2000/2001	0	0
2001/2002	2	80
2002/2003	0	0
2003/2004	6	3,892
2004/2005	5	7,657
2005/2006 (forecasted)	2	1,164
Total		

Table 33. Number of Permits Issued within FMA Area

Objective (5c) 1.1a.2: Up to a set volume of 10,000 m ³ of conifer is available in the FMA area for the Community Timber Use Program	Acceptable variance: Zero
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

In accordance with the Forest Management Agreement (FMA), paragraph 8(d), Canfor must make up to 10,000 m³ available for a Community Timber Use (CTU) Program.

The 2004/05 harvest season was the first year that the ASRD has requested that the 10,000 m³ volume be made available. This volume was made available in the Economy area, however, none of the local sawmillers or local loggers bid on that volume. This volume then went up for competitive bid and Canfor was the only bidder. For 2005/06, the volume was made available in the Latornell area and again, Canfor was the only bidder on the volume. This volume is treated separately and is recorded as CTP purchase volume, but is harvested by Canfor contractors.

Table 34 depicts the volume and area allocation of the CTU volume.

Area	2004/2005 (m ³)		2005/2006 (m ³)	
	Coniferous	Deciduous	Coniferous	Deciduous
Economy	9,819	5,414		
Latornell			8,536	215

Table 34. Volume Allocation of CTU by Timber Year

Canfor and ASRD are cooperating to make the CTU and Local Timber Permit (LTP) volume [see objective (5c) 1.1a.1] available as part of its 5 year General Development Plan. Canfor plans to show the location of the next 2 years worth of timber in each Annual Operating Plan (AOP).

Indicator (5c) 1.1b: Recreational opportunities

Objective (5c) 1.1b.1: Complete a recreational assessment within 5 years after the DFMP is approved	Acceptable variance: Zero
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Status: In progress

The DFMP was approved on November 3rd, 2003. This objective will be completed by November 3rd, 2008.

Objective (5c) 1.1b.2: Ensure 100% of Canfor campgrounds are maintained on the FMA area for use by the public	Acceptable variance: No campgrounds will be removed
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Status: Meets

Canfor maintains and promotes 5 recreational areas near Grande Prairie (MacLeod Flats, Economy Lake, Frying Pan Creek, Westview and Swan Lake) and 1 near Hines Creek (Stoney Lake). Contractors are retained to perform maintenance duties which include: maintenance and repair of the campsites, buildings and chattels, repair of vandalism, painting, garbage collection and removal, sanitary facilities cleaning and stocking, road maintenance, sanitation pump out, firewood and delivery, snag removal and access barrier installation.

Since 2003, surveys have been conducted on weekends and weekdays to gather data regarding usage, satisfaction, comments, etc. Data was collected in 2003, 2004 and 2005. The results are provided in Tables 35 to 39.

A total of 951 visitors were surveyed (2003 – 2005). Using a multiplier of 7.1, a total 6,752 visitors utilized Canfor’s recreation areas. As indicated in Table 35, Macleod Flats, Swan Lake and Stoney Lake received high use during May to August. Economy Lake experienced moderate use and Frying Pan received limited use in the Fall during hunting season (Sept. to Oct.). Westview appears to receive very few visitors.



Recreation Area	Number of Visitors 2003 - 2005 ^f												# Visitors Surveyed			
	Jan	Feb	Mar	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	2003	2004	2005	Total
Macleod Flats					589	653	1044	568	305	14			175	154	118	447
Economy Lake					199	28	227	78	43	28			23	24	38	85
Frying Pan Creek					0	0	36	0	57	50			20	0	0	20
Westview					0 ^b	0 ^b	0 ^b	14	0 ^b	0 ^b			2	0	0	2
Swan Lake	78	43	42.6	163	476	241	156	128	114	14.2	163	50	39	92	104	235
Stoney Lake					419	376	341	14	0	0			94	24	44	162
													353	294	304	951

a. Surveys are conducted May to Oct. for Economy Lake, Frying Pan Creek, Westview and Stoney Lake. Swan Lake is surveyed year-round.
b. Surveys were conducted but no one was available for interviews.
c. A multiplier of 7.1 was used to calculate total visitors.

Table 35. Number of Visitors

Table 36 provides the visitor's home town/ city. Overall, Grande Prairie residents comprised 33.6% of the visitors to Canfor recreation areas and for those respondents who indicated a home town/ city, it was the primary point of departure for all recreation areas except Stoney Lake. Visitors to Stoney Lake primarily came from Worsley, Fairview and Hines Creek. The farthest departure locales were Sundre, Edmonton, St. Albert, Red Deer, Sherwood Park, Stony Plain, Thorhill and Eureka River.

Town/City	Percentage						Total
	Macleod Flats	Economy Lake	Frying Pan Creek	Westview	Swan Lake	Stoney Lake	
Beaverlodge, AB	4.0	0.0	0.0	0.0	27.2	0.0	9.7
Grande Prairie, AB	68.3	19.4	9.1	0.0	20.7	8.5	33.6
Laglace, AB	1.0	0.0	0.0	0.0	0.0	0.0	0.3
Not specified	6.9	41.9	77.3	80.0	5.4	17.0	18.1
Wembley, AB	2.0	0.0	0.0	0.0	2.2	0.0	1.3
Grovedale, AB.	13.9	0.0	0.0	0.0	0.0	0.0	4.7
Bezanson, AB	2.0	29.0	0.0	0.0	0.0	0.0	3.7
Sundre, AB	0.0	3.2	0.0	0.0	0.0	0.0	0.3
Valleyview, AB	0.0	3.2	0.0	0.0	19.6	0.0	6.4
St. Albert, AB	0.0	3.2	0.0	0.0	0.0	0.0	0.3
Edmonton, AB	0.0	0.0	4.5	0.0	13.0	0.0	4.4
Grande Cache, AB	0.0	0.0	4.5	20.0	0.0	0.0	0.7
Spruce Grove, AB	0.0	0.0	4.5	0.0	0.0	0.0	0.3
High Prairie, AB	0.0	0.0	0.0	0.0	0.0	2.1	0.3
Fairview, AB	0.0	0.0	0.0	0.0	0.0	21.3	3.4
Hines Creek, AB	0.0	0.0	0.0	0.0	0.0	25.5	4.0
Worsley, AB	0.0	0.0	0.0	0.0	0.0	12.8	2.0
Woking, AB	0.0	0.0	0.0	0.0	0.0	2.1	0.3
Whitecourt, AB	0.0	0.0	0.0	0.0	4.3	0.0	1.3
Red Deer, AB	0.0	0.0	0.0	0.0	0.0	2.1	0.3
Eureka River, AB	0.0	0.0	0.0	0.0	0.0	2.1	0.3
Spirit River	0.0	0.0	0.0	0.0	0.0	2.1	0.3
Camrose, AB	0.0	0.0	0.0	0.0	1.1	0.0	0.3
DeBolt, AB	1.0	0.0	0.0	0.0	0.0	0.0	0.3
Edson, AB	0.0	0.0	0.0	0.0	1.1	0.0	0.3
Sherwood Park, AB	1.0	0.0	0.0	0.0	0.0	0.0	0.3
Thorhill, AB	0.0	0.0	0.0	0.0	1.1	0.0	0.3
Clairmont, AB	0.0	0.0	0.0	0.0	1.1	0.0	0.3
Stony Plain, AB	0.0	0.0	0.0	0.0	1.1	0.0	0.3
Teepee Creek, AB	0.0	0.0	0.0	0.0	1.1	0.0	0.3
Bluesky, AB	0.0	0.0	0.0	0.0	0.0	4.3	0.7
	100.0	100.0	100.0	100.0	100.0	100.0	100

Table 36. Visitor Home Town/City

As indicated in Table 37, nature/ camping outings and ATV riding predominated as the primary uses for Macleod Flats. Economy Lake was visited mainly for ATV, boating/ canoeing, and nature/ camping use. Hunting was the main activity for those visiting Frying Pan Creek and fishing was the main pursuit at Swan Lake. Users of Stoney Lake participated in fishing, camping and picnics

Recreation Area	Percent											Total %
	Hunting	Fishing	Nature/Camping	Picnic	ATV	Photography	Horses	Boat / Canoe	Hiking	Work	Other	
Macleod Flats	2.8	9.7	34.5	9.0	21.4	0.0	0.0	13.1	6.9	0.0	2.8	100.0
Economy Lake	8.6	0.0	14.3	5.7	40.0	0.0	0.0	28.6	2.9	0.0	0.0	100.0
Frying Pan Creek	66.7	0.0	16.7	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	100.0
Westview	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Swan Lake	0.8	74.8	6.3	9.4	0.8	2.4	0.0	5.5	0.0	0.0	0.0	100.0
Stoney Lake	0.0	39.4	35.2	5.6	2.8	0.0	0.0	12.7	0.0	1.4	2.8	100.0

Table 37. Activities

An occupancy rate was established for each recreation area based on the available stalls at each area and the number of stalls utilized by respondents. It should be noted that all recreation areas except Swan Lake have developed campsite stalls.

Table 38 indicates that for the period 2003 – 2005, Macleod Flats had the highest at 63.9%; all the others were in the range of 1.1% to 12.8 %. The overall occupancy rate for all the recreation areas combined was 19.4%.

Recreation Area	No. of Campsites				Number Sites Available ¹ 2003	Number of Occupied Sites ³	% Occupancy 2003-2005
	Single	Double	Triple	Total	2005		
Macleod Flats	5	7	0	19	9,405	6,014	63.9
Economy Lake	11	0	3	20	9,900	1,271	12.8
Frying Pan Creek	11	1	0	13	6,435	561	8.7
Westview	2	0	1	5	2,475	178	7.2
Swan Lake	0	0	0	0	0	0	0.0 ²
Stoney Lake	28	0	0	28	13,860	150	1.1
Overall % Occupancy 2003 - 2005					42,075	8,173	19.4
Note:							
1. Based on number of days sites available per year (165 days)							
2. Swan Lake has no developed sites, but users camp there none the less							
3. A multiplier of 7.1 was used.							

Table 38. Occupancy

For the period 2003 – 2005, 50.1 % of respondents rated the quality of all the sites combined as ‘excellent’ and 46.7% rated them as ‘good’ (Table 39). Individually, Macleod Flats, and Economy Lake received ‘excellent’ ratings of 77.9% and 84.2% respectively. Frying Pan Creek, Swan Lake and Stoney Lake received ‘good’ ratings of 60.0%, 77.1% and 17.9% respectively.

Recreation Area	Site Rating				Total (%)
	Poor	Fair	Good	Excellent	
Macleod Flats	0.0	0.0	22.1	77.9	
Economy Lake	0.0	0.0	15.8	84.2	
Frying Pan Creek	0.0	0.0	60.0	40.0	
Westview	0 ^a	0 ^a	0 ^a	0 ^a	
Swan Lake	0.0	2.1	77.1	20.8	
Stoney Lake	<u>2.6</u>	<u>12.8</u>	<u>66.7</u>	<u>17.9</u>	
Overall	0.4	2.7	50.2	46.7	100.0
Notes:					
a. Surveys were conducted but no people were available for interviews.					

Table 39. Rating of Site and Facility Quality

<p>Objective (5c) 1.1b.3: Promote Canfor campgrounds to the public</p>	<p>Acceptable variance: Not applicable</p>
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Status: Meets

Canfor prepares a campground brochure that is available at the following locations: Canfor Office, Grande Prairie Tourism Center, Rotary city bus tour (during summer months), Muskoseepi Park, Valleyview Tourism Center, High Prairie Tourism and Dunvegan Visitor Center.



Figure 22. Swan Lake Recreational Area

Indicator (5c) 1.1c: Communication with trappers impacted by harvest operations

<p>Objective (5c) 1.1c.1: Contact all trappers directly impacted by harvest operations</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

In accordance with the Trappers Consultation and Notification Program, maps for the 2005/2006 harvest season were hand delivered to trappers with registered traplines within the FMA area.

Any concerns reported by the trappers are tracked in Canfor’s Incident Tracking System (ITS), along with mitigative actions.

Indicator (5c) 1.1d: Communication with outfitters impacted by harvest operations

<p>Objective (5c) 1.1d.1: Contact all outfitters directly impacted by harvest operations</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

The information for this objective is reported by timber year not fiscal year.

All outfitters were mailed a 5-year General Development Plan (GDP) map on June 20th, 2005, prior to the 2005/2006 harvest season commencing.



Goal (5c) 1.2: Improve the value of raw timber material from the FMA area

Indicator (5c) 1.2a: To increase lumber recovery from the coniferous timber resource during the milling process

Objective (5c) 1.2a.1:

To increase lumber recovery by 14% at the millsite

Acceptable variance:

Variance to LRF: zero

Variance in time frame: between 3-6 months after the May 7th, 2000 target date

Status: Complete

This objective was completed and reported in the May 1st, 2001-April 30th, 2002 Annual Performance Monitoring Report.

8. Criterion 6: Accepting Society’s Responsibility for Sustainable Development

Critical Element 6a: Forest Management

Value (6a) 1.: Social values

Goal (6a) 1.1: To be responsive to the social values identified by the FMAC and other publics

Indicator (6a) 1.1a: Topics on in the current Issue List (compiled by FMAC since inception) are addressed by the Company to the Committee’s satisfaction

Acceptable variance:

Status: Complete

The Issues List was reviewed with FMAC on April 16th, 2003. All topics were addressed to the Committee’s satisfaction. The issues were incorporated into the DFMP that was approved November 3rd, 2003.

Indicator (6a) 1.1b: The number of Canfor responses to written letters or public meeting issues, etc.

Objective (6a) 1.1b.1:	Acceptable variance:
100% of public issues received after November 1999 are responded to by Canfor.	Zero
Status: Complete	

Status: Meets

All public concerns or inquiries are tracked in Canfor’s Incident Tracking System (ITS). In 2005, there were 14 concerns/inquiries for the FMA area. All of them received a response from Canfor. A summary of the concerns/comments follows:

- 3 regarding hauling an log trucks;
- 3 regarding vegetation management;
- 1 regarding concerns for wildlife;
- 1 firewood;
- 1 railway crossing;
- 1 Canfor’s Permanent Sample Plot (PSP) program;
- 1 road use;
- 1 regarding a contractors camp;
- 1 requesting completion of a questionnaire; and
- 1 regarding manning of gates.

Critical Element 6b: Duly Established Aboriginal and Treaty Rights are Respected

Value (6b) 1.: Understand and respect treaty and Aboriginal rights

Goal (6b) 1.1: Avoid infringement of treaty and Aboriginal rights

Indicator (6b) 1.1a: Amount of opportunity for input by Aboriginal peoples

<p>Objective (6b) 1.1a.1: To provide increased opportunities for input</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

Canfor provided opportunities for Aboriginal input for the reporting period via the following methods:

- As members of Canfor Forest Management Advisory Committee (FMAC);
 - The Sturgeon Lake Cree Nation (SLCN) and Metis Zone 6 were active members of FMAC. This Committee provides a venue for the group to provide input into Canfor’s management and operational plans. In the FMAC Terms of Reference for CSA Certification, there are many statements regarding input from the members:
 - *“Provide input regarding Forest Ecosystem Management Objectives”;*
 - *“In partnership with Canfor, will review, refine and implement the Public Involvement Program”;* and
 - *“All members will be given the opportunity to voice their perspectives.”*

Additionally, the Asenewuche Winewak Nation (AWN) was contacted to discuss its potential membership. AWN participates on the Foothills Model Forest public group and are not interested in joining Canfor's FMAC at this time.

- Holding separate meetings to discuss specific topics of concern;
 - Discussions were held with representatives of Sturgeon Lake Cree Nation to advise them of proposed Canfor activities in the band’s traditional territory on several occasions in 2005. Some concerns have emerged regarding potential disruption of trapping due to logging and roads. Canfor planning staff satisfactorily addressed site-specific concerns as they arose.
 - Canfor planning staff provided copies of the General Development Plan and Annual Operating Plan to the Asenewuche Winewak Nation of Canada in March 2005, and presented the plans in person to community elders in April 2005.
 - Canfor staff have issued several invitations to Metis Nation of Canada Zone 6 representatives to jointly review Annual Operating Plans and Canfor planning processes, however a meeting between the parties did not occur in 2005.
- By hosting open houses in local communities;
 - Annual Operating Plan (AOP) open houses were held in Grande Prairie and Grande Cache in December 2005.
 - Vegetation Management Plan open houses were held in Sturgeon Lake, Grande Prairie and Grande Cache in March 2005.
- Through the Trappers Consultation and Notification Program (see objective (5c)1.1c.1); and
 - Notification letters regarding proposed Canfor activities were sent to all registered trappers on the FMA prior to commencement of activities;
- Through the establishment of Memoranda of Understanding with Aboriginal communities.
 - A draft Memorandum of Understanding between Canfor and Sturgeon Lake was negotiated in 2003-04 but the incoming Chief and Council chose not to sign the agreement. An open offer was extended to the band in 2004 to resume discussions on the agreement but they have chosen to decline the offer at this time.
 - A draft Cooperation Agreement between the Asenewuche Winewak Nation of Canada and Canfor was negotiated in 2005 that includes guidelines for forestry plan consultation, education and training, cultural and community initiatives, business ventures and other

topics of interest to both parties. It is anticipated that the agreement will be finalized in mid-2006.

Objective (6b) 1.1a.2:	Acceptable variance:
To be responsive to aboriginal input	Zero

Status: Meets

Canfor is responsive to aboriginal input received through the initiatives listed in objective (6b) 1.1a.1, as well as via other correspondence.

Canfor was responsive to input from The Sturgeon Lake Cree Nation (SLCN) and Metis Zone 6 representatives in all meetings held throughout the reporting period.

Canfor did not receive any written correspondence from Aboriginal people in 2005 regarding input on proposed forestry activities. However, there were several verbal requests from aboriginal and non-aboriginal trappers to leave seismic line access open during and after logging and reforestation operations. Also, adjusting the harvest sequence in one area mitigated concern about potential impacts to a trap line cabin owned by a Sturgeon Lake Cree Nation member.

Critical Element 6c: The Special and Unique Needs of Aboriginal Peoples are Respected and Accommodated in Forest Management Decisions

Value (6c) 1.: Understand and respect Aboriginal special needs

Goal (6c) 1.1: Effective consultation with Aboriginals

Indicator (6c) 1.1a: Early consultation prior to decisions being made

Objective (6c) 1.1a.1:	Acceptable variance:
To develop and implement early consultation	Zero

Status: Meets

All methods of obtaining input listed in objective (6b) 1.1a.1 are examples of early consultation.

One of the earliest methods of consultation that become operational practice is via participation in the Forest Management Advisory Committee (FMAC). The group provides direction to Canfor’s certification commitments in the Detailed Forest Management Plan/ Sustainable Forest Management Plan.

The Sturgeon Lake Cree Nation (SLCN) and Metis Zone 6 was an active member of FMAC in 2005. The representatives received the 2004 Annual Performance Monitoring Report, the finalization of the values, objects, indicators and targets under Elements 6.1 “*Aboriginal and Treaty Rights*” and 6.2 “*Respect for Aboriginal Forest Values, Knowledge and Uses*” and the Sustainable Forest Management Plan that was approved on November 7th, 2005.

As well, Canfor met with the Asenewuche Winewak Nation (AWN) to discuss its potential membership. AWN participates on the Foothills Model Forest public group and are not interested in joining Canfor’s FMAC at this time.

Goal (6c) 1.2: To be open to the development of partnerships and working arrangements with
Aboriginals that are based on good, sound business practices and are mutually beneficial

Indicator (6c) 1.2a: Employment and business opportunities

<p>Objective (6c) 1.2a.1: To identify present and future employment business opportunities</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

The following are examples of aboriginal employment or initiatives by Canfor during 2005:

- Sturgeon Lake Resources successfully completed 390 ha of manual brushing and cut-stump silvicultural treatments, and 27 ha of basal herbicide application;
- SLCN crews were hired to conduct debris pile burning (approximately 10 person days); and
- An Alberta-based, but non-local aboriginal contractor successfully completed 432 ha of manual brushing and cut-stump silvicultural treatments, and 239 ha of backpack herbicide application.

During 2005, Canfor assisted several Sturgeon Lake Cree Nation community members by discussing realistic long-term contract opportunities in the areas of reforestation and log hauling. Some band members communicated their desire to establish independent companies with the intention of pursuing future contract opportunities with Canfor.

The draft Cooperation Agreement between Canfor and the Asenewuche Winewak Nation of Canada includes guidelines for employment, education and training and business ventures. Upon acceptance of the agreement by both parties, initiatives will be undertaken to identify specific opportunities for Aboriginal people in the Grande Cache area to gain employment in the forest industry.

Goal (6c) 1.3: Respect special cultural and historic sites

Indicator (6c) 1.3a: Location of special cultural sites

<p>Objective (6c) 1.3a.1: Re-assess the status of the existing archaeological and historical overview assessment that was completed on the FMA area and update, if necessary</p>	<p>Acceptable variance: Zero</p>
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Status: Complete

In 2002, Alberta Western Heritage (AWH) developed a Heritage Potential Model that received approval from Alberta Community Development (ACD). Since that time Canfor has used this model to complete overview assessments of harvest areas, roads and clearings. The overview assessments consider such factors as the heritage potential (high, medium or low), the season of the activity, the type of activity, level of disturbance, proximity to existing sites, trails etc. Certified archaeologists conduct pre-impact and post-impact field surveys based on the results of the overview assessment.

The Heritage Potential Model is continually being calibrated and improved as new sites are discovered within the FMA area. Due to their sensitivity, all heritage sites are confidential.

In 2005, Canfor personnel completed overview assessments on harvest areas and roads for the 2004/2005 harvest season in collaboration with AWH. Pre-impact surveys were completed by AWH prior to harvesting (fall 2004) and post-impact surveys were completed after harvesting (spring 2005). Overview assessments were also completed for the 2005/2006 harvest season in collaboration with



AWH. Pre impact surveys were completed by AWH prior to harvesting (summer 2005). Post-impact surveys for the 2005/2006 timber season will be completed In the spring of 2006.

During the pre and post impact surveys completed in 2005, 10 sites were discovered and protected as per AWH recommendations.

There was a non-conformance during 2004 when one harvest area was not fully evaluated through the overview assessment process when harvesting began. AWH was immediately contacted and it was determined that a survey was not required. The incident was recorded in Canfor Incident Tracking System (ITS) as a non-conformance to procedures.

Additionally, Canfor and other parties have agreed to support Sturgeon Lake Cree Nation (SLCN) to conduct a Traditional Use Study (TLUS) in the FMA area if they would like to do so. To date, no official decision has been made by SLCN whether they intend to undertake the study.

Critical Element 6d: The Decision-Making Process is Developed with Input from Directly Affected and Local Interested Parties

Value (6d) 1.: Public input

Goal (6d) 1.1: To proactively involve directly affected and local interested parties in the development of the decision-making process

Indicator (6d) 1.1a: Approved terms of reference for the FMAC

Objective (6d) 1.1a.1: To conduct the activities of the FMAC according to the Terms of Reference	Acceptable variance: Zero for the listed activities in DFMP
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Status: Meets

FMAC activities were in accordance to the Terms of Reference (TOR) in 2005. The TOR was last reviewed and ratified at the October 20th, 2004 meeting.

Critical Element 6e: Decisions are Made as a Result of Informed, Inclusive, and Fair Consultation with People Who Have an Interest in Forest Management or are Affected by Forest Management Decisions

Value (6e) 1.: Informed and enlightened public

Goal (6e) 1.1: To provide information regarding forest management practices

Indicator (6e) 1.1a: A report on Canfor’s forest management practices

Objective (6e) 1.1a.1: To provide an annual report to the public on Canfor’s forest management practices	Acceptable variance: The report will be available within 2 months after submission of the Annual Performance Monitoring Report
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Status: Meets

The Annual Public Report is a summary of operational performance that functions as a handout to the general public.

The Annual Public Report was completed on April 30th, 2005 within two months of the Annual Performance Monitoring report being issued (in Feb 28th, 2005). The next report will be produced by April 30th, 2006.

Indicator (6e) 1.1b: Copies of DFMP, AOP/5 Year GDP and Sustainable Forest Management Plan (SFMP) to all public libraries in the local area

<p>Objective (6e) 1.1b.1: To provide copies of DFMP, AOP/5 Year GDP and Sustainable Forest Management Plan (SFMP) to all public libraries in the local area</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

The following libraries have current versions of Canfor’s DFMP/SFMP and AOP/5 Year GDP:

- Grande Prairie;
- Grande Prairie Regional College;
- Valleyview;
- DeBolt;
- Grande Cache; and
- Spirit River.

Indicator (6e) 1.1c: Amount of elementary, secondary and post-secondary school-based forest educational opportunities supported by Canfor

<p>Objective (6e) 1.1c.1: To participate in at least 5 different types of educational opportunities</p>	<p>Acceptable variance: Zero on an annual basis</p>
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Status: Meets

Canfor participated in a number of educational opportunities:

1. Support of Grande Prairie and Area Forest Educator. The Forest Educator makes presentations to classrooms (about 140 classrooms per year), as well as conducting student hikes to experience the forest with hands-on learning.
2. Canon “Envirothon”, April 15th – 17th, 2005. For high school students to learn about forestry, soils, water, oil & gas and wildlife;
3. National Forest Week “Walk Thru The Forest” in May 2nd-4th, 2005. This is an outdoor venue for kids grades 4-6 to learn about tree identification, wildlife, insects infestations/tree diseases, tree measurements, planting of trees and logging/forest products;
4. National Forest Week “Arbour Day” May 5th, 2005, where employees visit grade 1 students to explain the importance of trees. They also distribute seedling and demonstrate how to plant them;
5. The National Forestry Week 2005 Forestry Show in May 5th –7th, 2005. Canfor hosted a booth with employees an materials available for the public (including students);
6. Tour on April 1st, 2005 with Grande Prairie Regional College (GPRC) forestry students of the Ecosystem Management Emulating Natural Disturbance (EMEND) site by John Spence of the University of Alberta and Tim Vinge from Canfor; and

7. The GPRC Career Fair on Feb 7th, 2005. Canfor hosted a booth with employees and materials for high school and college students.

Indicator (6e) 1.1d: Use of experts (i.e. herbicide guest lecture, wildlife biologists, ecological task force, etc.) to increase knowledge and understanding of forest ecosystems for the Forest Management Advisory Committee (FMAC)

<p>Objective (6e) 1.1d.1: Utilize the information provided by experts to increase knowledge and understanding of forest ecosystems</p>	<p>Acceptable variance: Not applicable</p>
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Status: Meets

FMAC members were provided information from experts for the following:

1. A presentation from Darryl Beresiuk, archeologist from Alberta Western Heritage on February 23rd, 2005 on archaeology;
2. Tour of the Ecosystem Management Emulating Natural Disturbance (EMEND) site on April 1st, 2005 by John Spence of the University of Alberta and Tim Vinge from Canfor;
3. Provincial association of Alberta Public Advisory Committees Conference June 3rd – 5th, 2005. Presentations regarding Integrated Landscape Management (ILM) by Jerry Bauer, Consultant, ILM, Bob Demulder, Program Manager, ILM, AB Chamber of Resources. Also Presentations regarding public involvement by Doug Sklar, Executive Director, Alberta Sustainable Resource Development and John Parkins, Senior Sociologist, Canadian Forest Service, Natural resources Canada; and
4. Presentation September 14th, 2005 on the Caribou Landscape Management Association and it's Long Term Access Plan, by Jim Stephenson, association representative for Canfor.

Value (6e) 2.: Informed company

Goal (6e) 2.1: To obtain public input on forest management practices using an open, transparent and accountable process

Indicator (6e) 2.1a: Amount of different types of public involvement opportunities that have been incorporated into the Company's planning as per the Public Involvement Program

<p>Objective (6e) 2.1a.1: To incorporate at least 4 different types of public involvement opportunities into the Company's planning activities on an annual basis</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

Canfor offered the following opportunities for public involvement during the reporting period:

1. An active FMAC advisory group;
2. Open Houses
 - Annual Operating Plan (AOP) open houses in Grande Prairie December 7th, Grande and Grande Cache December 8th, 2005; and
 - Vegetation Management Plan open house in Sturgeon Lake March 18th, Grande Prairie March 21st and Grande Cache March 23rd, 2005.
3. Annual trapper consultation and notification regarding harvest and silviculture plans;
4. Annual outfitter consultation and notification regarding harvest and silviculture plans; and



- 5. Letters and telephone calls to Canfor received response and were tracked in Canfor's Incident Tracking System (ITS).

As well, documents like the Annual Performance Monitoring Report, Annual Public Report, AOP/5 year GDP, DFMP/SFMP etc. are made available for the public in a variety of locations (at the Woodlands Office, Libraries, Open Houses, Forestry Shows, on Canfor.com website etc.) with contact numbers if there are concerns/inquiries from the public.

Critical Element 6f: Collective Understanding of Forest Ecosystems, Values and Management is Increased and Used in the Decision-Making Process

Value (6f) 1.: Knowledge of forest ecosystems and processes

Goal (6f) 1.1: To use adaptive management to improve the knowledge regarding ecological processes and the natural historic and current disturbance patterns for each ecosystem and to apply this knowledge to management of the resources within the FMA area

Indicator (6f) 1.1a: The degree to which actual field performance aligns with the DFMP

<p>Objective (6f) 1.1a.1: To produce a Forest Stewardship Report, every 5 years, as a measure of accountability to the public of management effectiveness</p>	<p>Acceptable variance: The report will be submitted within 1 month of the submission schedule, as stated in the DFMP</p>
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Status: In progress

The Forest Stewardship Report, due 5 years after the approval of the DFMP, is scheduled for submission November 3rd, 2008.

<p>Objective (6f) 1.1a.2: To validate Canfor's assumptions and test new theories to improve knowledge of forest ecosystems by conducting on-going research</p>	<p>Acceptable variance: Zero</p>
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Status: Meets

Canfor is involved in numerous research projects that assist in validation of assumptions and testing new theories (Table 40).



PROJECT	DESCRIPTION	TERM
AB Biodiversity Monitoring (ABMP)	A collaborative project to conduct a pilot project to test and validate ABMP sampling protocols. Data will be collected at approximately 5% of ABMP sites (106 ABMP sites) and that data will be used to demonstrate how biodiversity change will be measured and portrayed. Resource managers will be able to evaluate products and services produced by the ABMP, and assess the degree to which these can be used to meet their social and regulatory requirements and to make effective decisions about managing biodiversity	2004-2006
Boreal Forest Research Centre	Collaborative project to provide operating funds for the Center. The Boreal Forest Research Centre is a consensus governed, multi-party forest consolidation group that identifies and advocates for the regional research, development and educational priorities of the northwest boreal forest region. Their objectives are: 1. Promote public awareness and involvement in forest research, 2. Promote the coordination of research and development activities, 3. Promote technology transfer and training and 4. Promote high school student education in forest research	2004-2008
Campsite Maintenance	Collaborative project to promote and maintain six campsites to enable the public to enjoy the resources within the FMA area and quota areas.	2002-2006
Caribou Habitat Assessment	Continuation of the Caribou Project (1999 - 2004); being a collaborative project to develop a habitat assessment for the Little Smoky and A La Peche caribou herds to evaluate the quality, effectiveness, quantity and distribution of caribou habitat. Caribou habitat will be evaluated using forest cover data supplemented by current and future cutover activities and landuse disturbances (primarily road, pipeline, well site and seismic activity). Played a role in completion of work required for the CSA caribou non-conformance.	2004-2005
Caribou Land Management Association	Collaborative project to develop and implement a plan that will ensure the long-term conservation of the Little Smoky and A La Peche caribou herds. Management efforts will focus on 1) cooperating to reduce the future industrial footprint in caribou habitat 2) reclaiming the industrial footprint to restore Caribou habitat, 3) supporting applied research to increase knowledge about caribou and caribou habitat for the purpose of caribou conservation, 4) partnering and supporting Alberta government initiatives to manage caribou recovery through the Alberta Caribou Recovery Plan.	2005-2007
Caribou Phase I-IV	Continues Canfor's contribution to the U of A and WCACSC to conduct collaborative research in the Little Smoky herd range.	1997-2005
Competition Modeling (SSRS)	The primary objective of this project is to differentiate the impact of deciduous tree and tall shrub competition on specific coniferous crop tree species. In particular, the objective is to determine if tall shrub competition poses a similar challenge to meeting growth and yield assumptions as does deciduous tree species competition.	2004-2009
Ecological Classification P15 (HC)	The objective is to predict ecosites and ecosite phases in FMU P15 increase our understanding about the spatial dynamics of ecosystems at the landscape level. This knowledge can be applied to sustain environmental quality, social systems and economies based on ecosystem management principles not only at a local scale but also at the provincial and national scale as described by the Alberta Forest Conservation Strategy (1994).	2004-2006
EMEND I to IX (HC)	In the widest sense, the EMEND project integrates the efforts of biologists, economists, sociologists, and modelers to determine how harvest and regeneration of upland, mixedwood forest can best approximate natural disturbance regimes in NW Alberta. The project is designed to test predictions about benefits of alternative approaches to forest management. Participants in the project will study the ecological and production implications of harvest patterns that leave various amounts of residual structure after harvest. EMEND is an award winning project of world class status that is recognized as the largest multi-jurisdictional project in the world.	1997-2007
Forest Environmental Education Society of Alberta (FEESA)	Collaborative project to support FEESA. FEESA is a private, non-profit education organization established in 1985 to promote, co-ordinate and support bias-balanced environmental education across Alberta. FEESA endeavours to empower teachers and students with current, relevant information on environmental issues and the best means through which these issues may be addressed in the classroom.	1997-2010
Fisheries	A project to enhance fisheries knowledge base to minimize the ecological footprint of past and future developments on fish populations and aquatic habitats. Enhanced fish and fish habitat data will lend itself to achieving existing and immediate operational objectives (mitigation of problem crossings). Further, the information collected will be applied to improved strategic forest planning.	2003-2005
Foothills Growth & Yield Association	Collaborative project for forecasting and monitoring of managed stand growth and yield of lodgepole pine in the Lower and Upper Foothills and the Subalpine Natural Sub-regions of Alberta.	2000-2006
Forest Awareness	A collaborative project to provide advertisements to enhance the publics awareness of forestry and forestry jobs.	2005-2007
Forest Resource Educator (GP)	The Grande Prairie Education Society retains a Forest Resource Educator provides educational opportunities to K - 12 regarding Forestry.	1997-2010
Forest Resource Educator (HC)	Forest Educator from Mackenzie Educational Committee who provides educational opportunities to K - 12 regarding Forestry.	2001-2008
Grande Prairie Curriculum Development	A collaborative project to develop forestry courses at Grande prairie Regional College to transfer to the University of Northern British Columbia.	2005-2006
Grizzly Bear Study and Health	FMF project to extend Grizzly research to all portions of Eastern Slopes. Validation of models and tools developed by FMF in initial project will be validated in 2004-2007.	2001-2007
Insect & Disease Monitoring	In 1998, members of the Northwest Boreal Regional Integrated Pest Management Working Group (NBRIPMWG) participated in the development of an insect and disease monitoring system. In 2001, some of the members of the working group implemented a pilot project (DMI 01-33), testing all elements of the prototype in order to determine its strengths and weaknesses and to determine the time and resources needed to implement the system on a long-term basis. The pilot project was completed October 2001. In 2003, ASRD, Buchanan Lumber Ltd., Canadian Forest Products Ltd. (Grande Prairie), Manning Diversified Forest Products Ltd. and Slave Lake Pulp Corporation implement the insect and disease monitoring system for 2003.	2003-2004
Mixedwood Management Association	The MWMA's overall goal is to increase the understanding of mixedwoods and to encourage and assist in the use of this knowledge in forest management. The Association has seven objectives with the primary one to develop a unified and defensible monitoring protocol for the collection of common growth and yield response variables in post-treatment operation trials that will enable data pooling and analysis among interested companies.	2003-2005
Model II (M2RS) (HC)	The objective of the project was to develop Model II Regeneration Standards (M2RS) based on ecological and structural stand classification. The M2RS standards were completed Dec 2003. A three phase project was initiated in Jan. 2004 to standards to: 1.) Phase I: Validation and refinement of monitoring threshold values by increasing the sample size for stem analysis; 2.) Phase II: Field testing the Model 2 regeneration standards; and 3.) Phase II: Determining the relationship between treatments and strata standards.	2003-2006
Monitoring Sedimentation	Project to fulfil CSA objective 3c) 1.1a.1 to assess current methodologies and practices to measure siltation caused by forest road construction. The SCQI monitoring system developed by P Beaudry & Associates has been selected to achieve the objective. SCQI is a simple field-based indicator that generates reliable information about how well stream networks have been protected from increased sediment delivery caused by road crossings. It is not a detailed and quantitative sediment delivery model, but rather a simple but meaningful indicator of the protection of water quality.	2002-2006
Mountain Pine Beetle Monitoring	Collaborative project to provide resources to the Dawson Creek TSA MPB Management Plan to proactively monitor and control mountain pine beetle infestation within east central British Columbia. The intent is to prevent spread of the MPB from those areas into Alberta. Monitoring within Canfor's and Weyerhaeuser's Alberta FMAs will be conducted.	2005-2007
Response Surface Design	A collaborative project to identify the optimum stand tending and stem density regimes necessary for regenerating aspen and white spruce simultaneously on clearcut sites, with the goal of producing an aspen crop by age 30-45 and a high quality spruce sawlog crop by age 80+.	2001-2006
Silviculture Decision Support System (SDSS)	The primary objective of this project is to create a decision system that reads in operational and strategic level information in order to formulation harvest prescriptions that will facilitate the management of liability across an allocated landbase. The application will enable us to obtain a better understanding of the biophysical relationships within Canfor's dispositions and ultimately to develop a framework for evaluating and improving forest management practices.	2005-2006
Sustainable Forest Management Network	Canfor's sponsorship assists the SFMN to fulfil its mission to deliver an internationally recognized, interdisciplinary program that undertakes relevant university-based research. It assists to facilitate development of networks of researchers, industry, government and First Nations partners, and offer innovative approaches to knowledge transfer. Lastly, it assists SFMN to train scientists and advanced practitioners to meet the challenges of modern natural resource management.	2001-2007
Western Boreal Growth and Yield Cooperative	Collaborative project (Long Term Study) to establish, monitor, and assess a series of plots to study tree and stand development (establishment to final harvest) under controlled densities of aspen and white spruce with removal of competing understorey vegetation. Early stand growth, mortality and crown dynamics will be used to develop an individual tree growth model.	2000 - 2006
Wildlife Habitat Maintenance	The primary objective of this project is to control the deciduous competition on specific coniferous blocks (C and CD) utilizing motor manual brush saw treatment technique which provides the greatest overall benefit to many species of wildlife. Costs for the project were recouped from FRIAA based on incremental cost differences between herbicide and brush saw treatments.	2003 - 2005

Table 40. Research Projects in Which Canfor is Currently Participating

9. Additional Goals, Objectives and Indicators

Canfor and the FMAC developed other objectives in addition to those presented in the preceding sections.

<p>Objective (7) To produce fully integrated operational plans – Annual Operating Plan (AOP) and 5 Year General Development Plan (GDP) for the 2003 submission</p>	<p>Acceptable variance: Zero</p>
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Status: Complete

Tolko and Ainsworth have deciduous interests on Canfor FMA 9900037. Tolko has two Deciduous Timber Allocations (DTAs) with approved Annual Allowable Cuts (AAC's) of 114,712 m³ (DTA G150001) and 167,817 m³ (DTA G150002). Ainsworth has a reserved allocation of 170,000 m³ pending fulfillment of specified conditions with the Government of Alberta. Until such time that the conditions are fulfilled, the specified volume under reserve is not available for harvest.

Since June 1st, 2004, Canfor and Tolko have annually submitted an integrated GDP/AOP to Alberta Sustainable Resource Development (ASRD) detailing required volumes and harvest area locations from the FMA and DTAs respectively.

<p>Objective (8) To evaluate the range of variable retention configurations and develop a strategy by September 1st, 2004</p>	<p>Acceptable variance: Zero</p>
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Status: Complete

A strategy for variable retention was submitted to ASRD on August 26th, 2004, and a subsequent amendment to the strategy was submitted on Nov 26th, 2004. On Dec 6th, 2004 the variable retention strategy was approved by ASRD.

The final harvest plan will specify the target and methodology for structure retention. Volume targets for structure retention will vary by harvest area with an overall FMA target of 1% merchantable coniferous volume and 1% merchantable deciduous volume. The actual targets will be reconciled at the end of each 5-year cut control period. An acceptable variance over the 5-year target is +/- 10%.

To determine results, Canfor will conduct an ocular assessment of the retention volume left on site and then verify it using large-scale photography (Softcopy) to accurately determine the size of patches and their volume.

In 2005, the field estimates for variable retention for the 2004/2005 timber year are documented in Table 41 and were reported in the 2005 GDP.

The verification work using large-scale photography (Softcopy) to accurately determine the size of patches and their volume has not been completed at the time of writing. It will be incorporated into the 2006 GDP submission due June 1st, 2006.

Variable Retention	Conifer 04/05 Field estimate (m ³)	Deciduous 04/05 Field estimate (m ³)
Deep North	0	0
Deep South	605	20
E8	20	174
Economy North	0	240
Economy South	0	0
Latonnell	0	0
Peace	0	0
Pusk	35	20
Simonette	380	725
Smoky	290	230
Total/Year	1,330	1,409
Volume Harvested (m ³)	443,581	210,196
% Merchantable Retention	0.30%	0.67%
% Merchantable Retention Overall	0.42%	

Table 41. Variable Retention Estimates

<p>Objective (9) To identify ranges and type of stands that are being utilized by woodland caribou to assist in development of a strategy compatible with West Central Alberta Caribou Standing Committee objectives</p>	<p>Acceptable variance: Not applicable-research is ongoing</p>
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Status: In progress

Canfor has undertaken a range of initiatives to maintain woodland caribou habitat on the FMA area including:

- Adherence to the *Caribou Habitat Management Commitments* (Stephenson, 2005);
- Continue to implement cover constraints in the Annual Operating Plan (AOP);
- Continue an adaptive approach to caribou habitat management. As more information becomes available incorporate it into the planning process;
- Continue to actively work with oil and gas companies that are operating within the caribou herd ranges to reduce impacts on caribou habitat;
- Data resulting from the Caribou Landscape Management Association and West Central Alberta Caribou Standing Committee research programs will be evaluated and, if appropriate, be used to enhance forest management within the Caribou Area; and
- Canfor will participate in projects endorsed by the Caribou Landscape Management Association that apply to areas within the FMA area.

Canfor’s initiatives are complementary to the draft Caribou Recovery Plan (ASRD, 2004) prepared by the Alberta Woodland Caribou Recovery Team and submitted to the Minister for his consideration. That plan recommends goals, objectives, strategies and actions, both short- and long-term, required to maintain caribou populations in Alberta.

10. Summary

The status of the 91 objectives found throughout this Annual Performance Monitoring Report is summarized in Table 42.

Number of objectives are complete	10
Number of objectives that meet	55
Number of objectives that do not meet	4
Number of objectives that are in progress	12
Number of objectives not at their scheduled reporting time	10
Total number of objectives	91

Table 42. Result of Objectives Found Throughout Report

Canfor's performance is constantly being assessed through internal and external audits. During audits, three types of findings are possible:

Non-compliances – a finding that Canfor is doing something against government regulations. These can be classified as minor and major;

Non-conformances – a finding that Canfor is doing something against company commitments. These can be classified as minor and major;

Opportunities for Improvement – a finding that shows a weakness in Canfor's system that could potentially lead to a non-conformance or a non-compliance.

In 2005, Canfor was audited, with the following results:

- August 2005 - Canfor internal audit of CSA Z809-02 (GP) and ISO 14001:2004 (GP and HC):
 - 8 opportunities for improvement.
- September 2005 - independent third party re-certification audit of CSA Z809-02 and ISO 14001:2004:
 - 1 minor non-conformances; and
 - 10 opportunities for improvement.

Please note: that the audit results include findings under the ISO14001 standard that may not be related to SFM.

All independent third party audit non-conformances require an action plan to be submitted and approved by the third party to correct the issue. As well, Canfor develops action plans for all non-conformance and opportunities for improvement and records them in Incident Tracking System (ITS).

In addition to the audit process, any non-compliances and non-conformances discovered by Canfor during operations, are recorded and tracked in ITS to continually improve its operations.



11. Additional Information

Canfor's Sustainable Forest Management Plan (SFMP) and KPMG's Certification Updates are available on-line for public viewing on Canfor's website at www.canfor.com.

The complete DFMP/SFMP is available at the Canfor Grande Prairie office and at the following libraries: Grande Prairie, Grande Prairie Regional College, Valleyview, DeBolt, Grande Cache and Spirit River.

Any inquiries can be directed to Dwight Weeks at (780) 538-7745.

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