

2007 ANNUAL PERFORMANCE MONITORING REPORT

Grande Prairie Division

Reporting Period: January 1st, 2007 - December 31st, 2007

February 29, 2008



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Executive Summary

This *Annual Performance Monitoring Report* has been prepared in accordance with the CSA-Z809-02 standard (CSA, 2002). The report summarizes the progress and performance that Canfor Grande Prairie Division has achieved in meeting and maintaining the Sustainable Forest Management (SFM) standard requirements.

The 2005 Sustainable Forest Management Plan (SFMP) for the Canfor Grande Prairie Defined Forest Area is a compilation of CSA standard requirements, corporate commitments and local level values, objectives, indicators and targets. Canfor Grande Prairie's Forest Management Advisory Committee (FMAC) assisted Canfor in identifying the local level values, objectives, indicators and targets that are contained within the SFMP and in this report.

As a means of strengthening Canfor's commitment to SFM, the previous 2001 SFMP was incorporated in the Detailed Forest Management Plan (DFMP) required under the terms of Forest Management Agreement 9900037 (Province of Alberta Order in Council 198/99) (Canfor, 1999). The DFMP was reviewed and endorsed by the FMAC, then submitted to and approved by the Alberta government on November 3rd, 2003. In October 2006, the 2005 SFMP was incorporated into the 2003 DFMP and submitted to the Alberta government with a request that the government approve the replacement of the 2001 SFMP with the 2005 SFMP. To date, formal approval has not been received.

2007 was a difficult year for the forest industry, with many factors including: record low lumber prices, the rise in value of the Canadian dollar, dramatically decreasing North American housing starts, and a 15% export tax; combining to make this among the hardest times the industry has ever faced. Canfor Grande Prairie has been forced to respond to these hard times, with the finger joint mill closure, shut down periods for the sawmill and stringent cost-cutting measures implemented to continue to stay in business.

Mountain pine beetle (MPB) continued to be a great concern for Canfor in 2007. During late summer, 2006 an infestation of mountain pine beetle (*Dendroctonus ponderosae*) occurred within a significant portion of the Forest Management Agreement (FMA) area. The infestation attracted the immediate attention of the Alberta government, the forest industry and the general public. In response to this situation, Canfor, in conjunction with the Alberta government, is developing an amended harvest sequence that follows the government Mountain Pine Action Plan (ASRD, 2006).

Public concern also continued in 2007 regarding the management of caribou and caribou habitat within the Little Smoky and A La Peche caribou herd ranges, 15% of which lies within the Canfor FMA area. On Oct 17th, 2007 Canfor Grande Prairie extended its February 11th, 2005 commitment to defer timber harvesting and road building activities in the caribou area for two years, as well as ceasing all forestry activity during May and June, (the calving season) by an additional year. The primary intent of the deferral is to provide sufficient time for the Alberta government to implement strategies under theAlberta Woodland Caribou Recovery Plan (AWCRT, 2005). Canfor continues to be actively engaged in the caribou recovery plan process through its membership in the Caribou Landscape Management Association.

Canfor Grande Prairie maintained overall conformance to the SFM requirements of the CSA Z809-02 standard, the ISO 14001:2004 standard and Canfor corporate environmental commitments in 2007.

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

| Classification | 2006 | 2007 |
|---|------|------|
| Number of targets completed | 0 | 0 |
| Number of targets met | 36 | 38 |
| Number of targets not met | 12 | 12 |
| Number of targets in progress | 3 | 0 |
| Number of targets not due for reporting | 9 | 10 |
| Total number of CSA Z809-02 targets | 60 | 60 |

Please Note: In the Jan 1st, 2006 – Dec 31st, 2006 Annual Report, it was reported that 36 targets met and 12 targets were not met. Target (3.2) 1a.3.1was incorrectly reported as not meeting when it actually did meet (the non-compliance occurred off of the DFA, therefore is was not applicable to the report. Also, target (5.1) 1a.1.1 was incorrectly reported as meeting , when it was not due for reporting. The correct number of targets that met was 36, targets that were not met was 12, and target not due for reporting was 9.

There has been improvement made in the number of targets met. Targets that were not met have details as to why they have not been met in 2007 and actions to address the deficiencies if applicable.

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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 Forest *Care.* 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. Canfor subsequently amalgamated the EMS and SFMS in the Canfor Forest Management System (FMS), under which it operated in 2006.

1.2. The CSA Standard

In 1996, 6 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. The criteria are identified 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 led to the development of a set of critical elements for each of the criteria. 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, objectives², indicators³ and targets⁴. Canfor's public advisory group, the Forest Management Plan (SFMP) by identifying quantifiable local level values, objectives, indicators and targets appropriate to sustainable forest management.

Quick Facts

1997 – Canfor Alberta Operations Forest *Care* certified

1999 - (November) Canfor Grande Prairie's Environmental Management System (EMS) certified to ISO 14001:1996 standard

2000 - (June) FMA 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 recertification audit to the Forest*Care* standard

2005 - (November) Successful re-certification of FMS to ISO 14001:2004, and SFMP to CSA-Z809-02 standards

¹ Values: an FMA area characteristic, component or quality considered by an interested party to be important in relation to a CSA SFM element or other locally identified element;

² Objectives: a broad statement describing a desired future state or condition for a value;

³ Indicators: a variable that measures or describes the state or condition of a value; and

⁴ Targets: a specified statement describing a desired future state or condition of an indicator. Targets should be clearly defined, time limited, and quantified if possible.

1.3. Sustainable Forest Management (SFM) Policy

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

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 Figure 1 below. The operational units have been identified as well for reference when mentioned throughout the report.





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

Canfor prepares an *Annual Performance Monitoring Report* to report its progress in meeting commitments identified in the SFMP in accordance with the CSA Z809-02 standard (CSA, 2002). The report contains information regarding the achievement and maintenance of Sustainable Forest Management (SFM) requirements in general (Section 2) and also indicates the status of each of the 60 targets (Sections 3-9). Five classifications are used for reporting the status for each objective:

- 1. Completed;
- 2. Meets;
- 3. Does not meet;
- 4. In progress; or
- 5. Not a scheduled reporting time.

2. Progress in Meeting and Maintaining SFM Requirements

In 2005, the Canfor Forest Management Advisory Committee (FMAC) developed quantifiable local level values, objectives, indicators and targets of sustainable forest management, as defined in the Canadian Standards Association (CSA) Z809-02 standard. 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.

Since approval of the SFMP, Canfor Grande Prairie has maintained overall conformance to the SFM requirements of the CSA Z809-02 standard and Canfor corporate commitments. Results of internal and external third party audits can be found in Section 9.

Progress towards achievement of individual targets is found in Sections 3 - 8. Targets are reported on fiscal year unless it is stated that it is being reported by timber year (May 1^{st} to April 30^{th}).

3. Criterion 1: Conservation of Biological Diversity

Conserve biological diversity by maintaining integrity, function and diversity of living organisms and the complexes of which they are part.

Critical Element (1.1): Ecosystem Diversity

Conserve ecosystems diversity at the landscape level by maintaining the variety of communities and ecosystems that naturally occur on the DFA.

Value (1.1) 1: All natural ecosystems are important on the landscape

Objective (1.1) 1a: All current ecosystems are represented on the landscape at natural levels **Indicator (1.1) 1a.1:** Area (%) in each seral stage

| Target (1.1) 1a.1.1: | Acceptable variance: |
|--|-----------------------------------|
| 100% of the seral stages will meet the 2009 projections. | \pm 20% of the 2009 projections |

Status: Not a scheduled reporting time

Seral stage baselines are reported in the 2005 Sustainable Forest Management Plan. Seral stage comparisons will be compared to the 2009 forecasts in the 2009 *Annual Performance Monitoring Report*.

Critical Element (1.2): Species Diversity

Conserve species diversity by ensuring that habitats for the native species found on the DFA are maintained through time.

Value (1.2) 1: Through time all current habitats are represented.

Objective (1.2) 1a: Current species diversity is maintained on the landscape. **Indicator (1.2) 1a.1:** Habitat suitability rating.

| Target (1.2) 1a.1.1: | Acceptable variance: |
|--|---|
| To maintain the habitat suitability rating | To maintain, within ±20%, the proportions (area) of |
| for each ecosection group for the | general habitat, critical habitat and landscape metrics that |
| period 1997-2017 at the 1997 level. | contribute to each wildlife guild habitat suitability rating. |

Status: Not a scheduled reporting time

Baseline wildlife guild habitat suitability ratings (1997) will be compared to actual (2007) and the results will be reported in the 2008 Annual Performance Monitoring Report.

Indicator (1.2) 1a.2: Number of bull trout watersheds with $\ge 35\%$ Equivalent Clearcut Area (ECA) above the H60⁵ elevation.

| Target (1.2) 1a.2.1: | Acceptable variance: |
|---|--|
| Annually, zero bull trout watersheds with \geq 35% equivalent clear-cut area (ECA) above the H60 elevation. | No more than 5 (3%) of the watersheds in the bull trout area to exceed 35% ECA above the H60 elevation |

Status: Meets

⁵ H60 is the elevation above which 60% of the watersheds lie (the watershed area above the H60 is considered as the source area for the major snowmelt peak flows).

Bull trout habitat is monitored by calculating the Equivalent Clearcut Area (ECA) in the bull trout watersheds above the H60 line. Each year Canfor utilizes the Detailed Forest Management Plan DFMP/Annual Operating Plan (AOP) validation process to verify whether watersheds exceed the target. As seen in Table 1, there are currently two watersheds that exceed the 35% target. The first is watershed 2057, which was originally reported in 2005 as with an ECA of 40%. Since that time, the watershed has recovered to 38%. In 2007, an additional watershed exceeded the 35% target. This is watershed 1775, which is currently at an ECA of 37%.

| Watershed ID | 1999 ECA% | 2005 ECA % | 2006 ECA % | 2007 ECA% |
|--------------|-----------|------------|------------|-----------|
| 2057 | 48 | 40 | 38 | 38 |
| 1775 | - | - | - | 37 |

Table 1. Watersheds Above the ECA of 35%

Indicator (1.2) 1a.3: Percentage of habitat for endangered⁶ or threatened⁷ vertebrate species over time.

| Target (1.2) 1a.3.1:Modeland Caribou: no more than 20% of the area in pioneer or young seral condition and at least 20% of the area in old seral condition at key points in time.Modeland CaribouTrumpeter Swan: to buffer 100% of identified trumpeter swan lakes with a 200m no harvest buffer (reported annually).Modeland Caribou | Acceptable variance: <u>Woodland Caribou</u> : in 2009 pioneer/ young seral condition will be \leq 18% of the area and for old seral condition will be \geq 11% of the area. <u>Trumpeter Swan</u> : zero |
|---|--|
|---|--|

Status: Woodland Caribou: Not scheduled reporting time

Trumpeter Swan: Meets

*Because this is a 2-component target, for the summary of performance tables (found in the Executive Summary and Section 9-Summary) and the reporting in Target (6.1) 1a.1.1, this target has been reported as Meets.

Woodland Caribou

This target is reported on at key points in time (2009, 2019, 2049...). The percentage area in pioneer/young and old seral condition will be reported in the 2009 Annual Performance Monitoring Report.

In 2005, Canfor deferred timber harvesting within the range of the Little Smoky caribou herd for 2 years. The 2 years have elapsed and Canfor has extended the deferral for 1 additional year. Harvesting did not occur within the caribou area in the 2005 and 2006 timber years⁸, and is not planned for the 2007 timber year. The primary purpose of the deferral was to allow time for development of habitat and other management targets through the Alberta Caribou Recovery Plan (AWCRT, 2005) process.

In 2005, the Caribou Landscape Management Association (CLMA) was established by a consortium of energy, utility and forestry companies, and a First Nation for the purpose of collaborating on caribou management issues. The CLMA has been very active since its inception, and has successfully undertaken several significant projects including those involving habitat restoration, caribou calf recruitment, long term access plan development and creation of an adaptive management program. In addition, the CLMA has developed a close relationship with the Alberta Caribou Committee and the

⁶ Endangered: Any species facing imminent extirpation or extinction

⁷ Threatened: Any species likely to become endangered if limiting factors are not reversed.

⁸ Timber year: Is based in a logging season from May 1 of year listed to April 30 of the next year. i.e. 2006 timber year is from May 1st, 2006 to April 30th, 2007.

West Central Caribou Landscape Planning Team, which have been formed by the Alberta government to assist with the development and implementation of caribou recovery strategies.

Trumpeter Swan

Water bodies supporting trumpeter swan habitat are identified by Alberta Sustainable Resource Department (ASRD) and provided to Canfor. Canfor uses this information to update the database on an annual basis. The harvest areas for the 2006 timber year were superimposed onto the buffered water bodies; the results indicate that no harvesting occurred in trumpeter swan buffered water bodies.

Indicator (1.2) 1a.4: Percentage of Canfor forestry staff trained to identify rare plants.

| Target (1.2) 1a.4.1: | Acceptable variance: |
|--|--|
| 100% of the Canfor forestry staff receives training to | 90% of the forestry staff receives training to |
| identify and report rare plants (reported annually). | identify and report rare plants. |

Status: Meets

All staff requiring rare plant identification training have received training. A total of 7 new staff members were trained in 2007 (Table 2).

| | Forestry Employee | Date Trained |
|-------------------------------|---|--------------|
| Full Time Forestry | Woodlands Manager | 16-Dec-2005 |
| Employees | Woodlands Superintendent | 12-Jun-2001 |
| | Strategic Planning Superintendent | 16-Dec-2005 |
| | Planning Superintendent | 16-Dec-2005 |
| | Silviculture Forester (new in 2007) | 02 May 2007 |
| | Forestry Supervisor #1 | 12-Jun-2001 |
| | Forestry Supervisor #2 | 8-Jun-2005 |
| | Operations Supervisor (Harvesting #1) | 16-Dec-2005 |
| | Operations Supervisor (Harvesting #2) | 20-Jan-2006 |
| | Operations Supervisor (Harvesting #3) | 16-Dec-2005 |
| | Operations Supervisor (Planning) | 12-Jun-2001 |
| | Operations Supervisor (Log Haul) | 16-Dec-2005 |
| | Operations Supervisor (Roads) | 16-Dec-2005 |
| | Operations Supervisor (Silviculture #1) | 16-Dec-2005 |
| | Operations Supervisor (Silviculture #2) | 16-Dec-2005 |
| | Landuse Coordinator | 16-Dec-2005 |
| Temporary Forestry | Temp. Forestry Supervisor #1 | 6-April 2006 |
| Employees | Temp. Forestry Supervisor #2 | 1-Feb-2006 |
| | Temp. Forestry Supervisor #3 | 6-April 2006 |
| | Temp Forestry Supervisor #4 | 16-Dec-2005 |
| Summer Student | Layout Student #1 | 02 May 2007 |
| Forestry Employees | Layout Student #2 | 02 May 2007 |
| | Layout Student #3 | 02 May 2007 |
| | Silviculture Student #1 | 02 May 2007 |
| | Silviculture Student #2 | 02 May 2007 |
| | Silviculture Student #3 | 02 May 2007 |
| Total Required Forestr | y Personnel Trained | 100% |

Table 2. Staff Trained in Rare Plant Identification and Reporting (2007)

Indicator (1.2) 1a.5: Number of biodiversity monitoring programs in which Canfor actively participates.

| Target (1.2) 1a.5.1: | Acceptable variance: |
|---|----------------------|
| Participates in 1 or more biodiversity monitoring | Zero |
| program(s) annually. | |

Status: Meets

Canfor continues to support two significant biodiversity monitoring programs.

From 2004 - 2006, Canfor contributed funds that assisted to establish the Alberta Biodiversity Monitoring Program (ABMP) as a fully functioning program, now operating as the Alberta Biodiversity Monitoring Institute (ABMI). ABMI conducts world class monitoring of the changing state of Alberta's species, habitats and ecosystems. http://www.abmi.ca/abmi/home/home.jsp

Commencing in 1997, Canfor and other partners assisted to establish and fund the Ecological Management Emulating Natural Disturbance (EMEND) project. The EMEND project, located near Peace River, Alberta, Canada, is a large-scale variable retention harvest experiment designed specifically to answer questions about how retention of green tree residuals affects harvest cost, forest regeneration, patterns of succession, biodiversity, nutrient cycling, ground water characteristics and public perception. EMEND is a long-term project that began in 1998 and is forecasted to run for one stand rotation, or approximately 80-100 years. The project has two primary objectives:

- To determine which forest harvest and regenerative practices best maintain biotic communities, spatial patterns of forest structure, functional ecosystem integrity in comparison with mixed-wood landscapes that have originated through wildfire and other inherent natural disturbances; and
- To employ economic and social analyses to evaluate these practices in terms of economic viability, sustainability and social acceptability. http://www.emend.rr.ualberta.ca/index.asp

Indicator (1.2) 1a.6: Percentage (volume/ha) of Coarse Woody Debris (CWD) on harvested areas.

| Target (1.2) 1a.6.1: | Acceptable variance: |
|--|------------------------------------|
| 100% of the pre-harvest volume per hectare CWD will be | >90% of the pre-harvest CWD volume |
| retained on harvest areas annually. | per hectare. |

Status: Not scheduled reporting time

Pre-harvest coarse woody debris volumes were determined from operational cruise plot data collected between 1995 and 2000, and compiled by yield group⁹. Post harvest coarse woody debris data is collected in conjunction with the waste and residue surveys, conducted every 2 years. There was no waste survey conducted in 2007, the next scheduled survey will be in 2008, and will be reported on the 2008 *Annual Performance Monitoring Report*. Data used in establishing target volumes and collected during post harvest surveys is weighted by yield group to determine average coarse woody debris volumes by hectare for areas harvested during the particular year.

Methodology used in the 2006 coarse woody debris survey was revised to be more consistent with that used in establishing yield group pre-harvest volumes. Specifically, stump volume was not tallied, as it had not been included in pre-harvest data. The results of the 2006 coarse woody debris survey were compiled by Timberline Natural Resource Group Ltd. and are summarized below:

⁹ Yield Group: a group of similar forest types that have similar yield (the volume of wood that can be removed that is equal to growth within the total forest) expectations.

| Description | Pre-Harvest Result | Minimum Acceptable Variance | Post Harvest Result |
|---|-----------------------|--------------------------------|------------------------|
| Coarse Woody Debris Results - Vol/Ha | 105.4 | 94.8 | 103.1 |
| Coarse Woody Debris Results - % | 100% | 90% | 98% |

Table 3. 2006 Coarse Woody Debris Survey Results

Indicator (1.2) 1a.7: Percentage of area (ha) in watercourse buffers.

| Target (1.2) 1a.7.1: The actual area in watercourse buffers is a minimum of 100% | Acceptable variance: |
|---|----------------------|
| of the planned (DFMP) area (ha) annually. | Zelo |

Status: Meets

There are 37,716 hectares in the Detailed Forest Management Plan (DFMP) designated for watercourse buffering. When comparing the 2007 Annual Operating Plan (AOP) to the DFMP watercourse buffers (Table 4) the results indicate the actual area in watercourse buffers is 104% of the planned DFMP area. This is a result of an additional 1,639 ha that was buffered over and above what the DFMP designated.

Table 4. DFMP Buffer Area Versus AOP Buffer Area

| | | Additional Area | DFMP Buffer Area Not | Net Addition | Net Total | % of DFMP |
|------|-------------|---------------------------|--------------------------|--------------|--------------|-----------|
| | DFMP Buffer | Buffered (deleted) in the | Used (added back to DFMP | of Landbase | Area in | Planned |
| Year | Area (ha) | AOP (ha) | landbase) | into Buffers | Buffers (ha) | buffers |
| 2004 | 37,716 | 4,289 | unknown | unknonw | 42,005 | 111% |
| 2005 | 37,716 | 4,328 | unknown | unknown | 42,044 | 111% |
| 2006 | 37,716 | 4,415 | 2,766 | 1,649 | 39,365 | 104% |
| 2007 | 37,716 | 4,452 | 2,813 | 1,639 | 39,355 | 104% |

Indicator (1.2) 1a.8: Percent of the area harvested across the FMA area with structure retention.

| Target (1.2) 1a.8.1: A minimum of 25% of the area harvested across the FMA area will contain structure retention accumulated annually beginning in 2002. | Acceptable variance: Minimum of 20% of the area harvested across the FMA area will contain structure retention accumulated annually. |
|--|---|
| | |

Status: Does not meet

Table 5 shows the results of areas harvested from 2002 to 2006 timber years.

The following forms of structure retention have historically been retained on harvested areas across the FMA area:

- Incidental merchantable deciduous timber that was not required by the deciduous operators at the time of harvest left in patches or as single trees;
- No harvest zones (NHZ) designed to protect wildlife features, sensitive sites or immature timber;
- Understorey protection;
- Riparian buffers;
- Snags; and
- Machine free zones (MFZ).



Riparian buffers, machine free zones and no harvest zones are typically delineated from the harvest area with flagging. Decisions regarding the quantity and location of incidental merchantable deciduous and coniferous understorey¹⁰ protection are made by Canfor operations supervisors and equipment operators.

As of the 2006 timber year, 17% of the area harvested contains structural retention. The total of 2005 and 2006 was lower (9%) than previous years, which decreased the overall percent retention from 21% in the 2006 *Annual Performance Monitoring Report* to 17% in this report. Due to the recent intrusion of the Mountain Pine Beetle into the DFA, the focus for harvesting has been on lodgepole pine. Lodgepole pine tends to grow as an even-aged monoculture species, which generally has fewer potential areas to leave for structure retention. There may be a need to review this target in the future.

| | | Disturbance Class | | | Snags | | | | |
|---|----------|-------------------|----------|----------|---------|---------------|-------|--------------------|--------|
| Timber Year | Clearcut | 76 - 94% | 51 - 75% | 26 - 50% | 1 - 25% | No Harvest | >6/ha | Total Retention | Total |
| 2002 | 2,215 | 50 | 51 | 84 | 28 | 34 | 494 | 741 | 2,956 |
| 2003 | 2,028 | 130 | 100 | 18 | 23 | 77 | 482 | 830 | 2,858 |
| 2004 | 3,263 | 13 | 15 | 22 | 35 | 102 | 234 | 421 | 3,684 |
| 2005 & 2006* | 3,917 | - | - | - | - | - | - | 396 | 4,313 |
| Total | 11,423 | 193 | 166 | 124 | 86 | 213 | 1,210 | 2,389 | 13,812 |
| Percent Retention | 83% | | | | | | | 17% | |
| * Interpretation of the 2005 & 2006 harvest areas did not allocate retention into the various classes | | | | | | | | | |

 Table 5. Area (ha) and Percentage of Structure Retention Across the FMA area

Critical Element (1.3): Genetic Diversity

Conserve genetic diversity by maintaining the variation of genes within species.

Value (1.3) 1: Respect the natural genetic diversity.

Objective (1.3) 1a: Genetic diversity will be maintained on the landscape. **Indicator (1.3) 1a.1:** Mean Patch Size (MPS) (ha).

| Target (1.3) 1a.1.1: The MPS (ba) for 2009 will not fall below the | Acceptable variance: MPS will not fall below 15% of the area of the |
|---|--|
| MPS forecasts for each reporting unit. | 2009 MPS forecast for the FMA area and the |
| | Peace, Puskwaskau and Main parcels |

Status: Not a scheduled reporting time

Mean patch size (MPS) will be monitored against the 2009 projections as provided in the approved DFMP and reported in the 2009 *Annual Performance Monitoring Report*.

MPS, together with patch size distribution in various seral stage¹¹ classes, provides an insight into the level of fragmentation of the forest land. Forest patches are created by natural disturbance (wind, fire, pests etc.) and through harvesting activities. Over an entire rotation, forest management activities can alter the distribution and size of patches by fragmenting the landscape beyond the limits of natural variability. Many of the landscape level bird studies report mean patch size to be an effective indicator of incidence and reproductive output (Edenius and Sjoberg 1997; Roberts and Norment 1999).

¹⁰ Understrorey: trees and other woody species growing under the canopies of larger adjacent trees and other woody growth.

¹¹ Seral stage: The series of plant community conditions that develop during ecological succession from bare ground to the potential plant community capable of existing on a site where stand replacement begins and the secondary successional process starts again.

| Indicator | (1.3) | 1a.2: Mean | Nearest Neighbor | Distance | (MNND) | (m |). |
|-----------|-------|------------|------------------|----------|--------|----|----|
|-----------|-------|------------|------------------|----------|--------|----|----|

| Target (1.3) 1a.2.1: | Acceptable variance: |
|--|--|
| The MNND for 2009 will not exceed the MNND | MNND will not exceed +15% of the 2009 forecast |
| forecasts. | for the FMA area and the Peace, Puskwaskau and |
| 「他的友格」という。それはたいという。 | Main parcels. |

Status: Not a scheduled reporting time

Mean nearest neighbor distance (MNND) will be calculated annually using forest cover updates and reported in the 2009 Annual Performance Monitoring Report.

Mean Nearest Neighbor Distance (MNND) describes the proximity of forest patches, thus providing a quantitative measure of connectivity (Schumaker, 1996; With, 1999). Connectivity is a complementary measure of the degree to which forest patches can be considered joined together on the basis of a minimum acceptable separation distance. The connectivity (distance) of habitat patches is extremely important for large animals such as moose and caribou, 2 of the indicator species in the FMA area.

Indicator (1.3) 1a.3: Area Weighted Mean Shape Index (AWMSI).

| Target (1.3) 1a.3.1: | Acceptable variance: |
|--|--|
| The AWMSI for 2009 will not fall below the | AWMSI will not decrease by –15% of the 2009 |
| AWMSI forecast. | forecast for the FMA area and the Peace, Puskwaskau and Main parcels. |

Status: Not a scheduled reporting time

The area-weighted mean shape index (AWMSI) will be calculated annually using forest cover updates and reported in the 2009 Annual Performance Monitoring Report.

Area-Weighted Mean Shape Index (AWMSI) provides a measure of patch shape complexity based on the perimeter-to-area ratio. The complexity of patch shapes in combination with the area of the shapes can influence many ecological processes. Small mammal migration, woody plant colonization and animal foraging strategies are influenced by patch shape. Many ecological effects attributed to the complexity of shape are actually related to "edge effects. In addition, shape influences the operability and economics of forest harvesting. For example, elongated harvest areas require more road construction than compact harvest areas and thus are more costly. Planned harvest areas are generally simple in shape and are usually somewhat rectangular. Where this is the case, the lack of measured complexity can be compensated operationally by retaining single trees or patches near harvest area boundaries and by establishing minor boundary changes in the field to create more edges relative to area.

Indicator (1.3) 1a.4: Percentage of total area by patch size class.

| Target (1.3) 1a.4.1: | Acceptable variance: | |
|---|----------------------------------|--|
| 100% of the total area by patch size class will | $\pm 10\%$ of the 2009 forecast. | |
| meet the 2009 projections. | | |

Status: Not a scheduled reporting time

The distribution of patch sizes will be calculated annually using forest cover updates and reported in the 2009 *Annual Performance Monitoring Report*.

Patch size distributions were derived for the Boreal Forest and Foothills Natural regions based on theoretical fire-return intervals (ORM, 2000). Targets for the Boreal Forest Natural region were derived from measured patch size classes of four 20-year periods of unmanaged forests (Delong and Tanner, 1996); while targets for the Foothills Natural region were based on the distribution of patch sizes in historical pre-suppression air photos of the Foothills Model Forest in Hinton, Alberta (Andison, 1997).

Indicator (1.3) 1a.5: Percentage of area planted with genetically improved stock.

| Target (1.3) 1a.5.1: | Acceptable variance: |
|---|-------------------------------------|
| A maximum of 70% of area is planted with genetically improved | Zero. |
| stock accumulated annually. | and the second second second second |

Status: Meets

Canfor began reporting on genetically improved stock planting on the FMA area in 2002. Lodgepole pine was the only genetically improved seed available at that time. In 2004, genetically improved white spruce was also planted. In 2007, the orchard produced a very large crop of white spruce (98.68 million seeds vs. an annual need of 12.67 million seeds). The lodgepole pine crop was substantially less at 4.23 million seeds vs. an annual need of 6.54 million seeds. Steps are being taken to increase pine production through girdling trials and top pruning management. Table 6 indicates that Canfor's pine use is at the maximum for use of genetically improved stock. With the onset of the Mountain pine beetle and increase in pine harvesting, there will be less demand for the spruce.

Table 6. Percentage Area of Genetically Improved Stock Planted

| | % Useage By Year | | | | | |
|---|------------------|------|------|------|------|------|
| Stock Origin | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Percentage Area Planted with Genetically Improved Lodgepole Pine Stock | 24 | 23 | 16 | 4 | 41 | 71 |
| Percentage Area Planted with Genetically Improved White Spruce Stock | 0 | 0 | 44 | 78 | 75 | 47 |
| Total Percentage Area Planted with Genetically Improved Stock | 24 | 23 | 29 | 45 | 53 | 60 |

Indicator (1.3) 1a.6: Percentage of grass seed mix that contains restricted and noxious weeds.

| Target (1.3) 1a.6.1: | Acceptable variance: |
|--|----------------------|
| 100% of utilized grass seed mix will not contain restricted or | Zero |
| noxious weeds as identified in the Weed Control Act annually. | |

Status: Meets

Seed purity is confirmed prior to seeding by reviewing the "Certificate of Seed Analysis" provided by the seed seller. All seed used in reclamation, deactivation, erosion control and new road construction in 2007 was free of restricted or noxious weed seeds.

Objective (1.3) 1b: Conditions that support genetic diversity of species will be maintained. **Indicator (1.3) 1b.1:** Percentage of seeds collected and seedlings planted in accordance with the "*Standards for Tree Improvement in Alberta*" (ASRD, 2005).

Target (1.3) 1b1.1: 100% of seeds collected and seedlings planted annually will be in accordance with "*Standards for Tree Improvement in Alberta*". Acceptable variance: Zero

Status: Does not meet

Canfor cannot accurately report on this target for 2007. There is a discrepancy between seedzones assigned for several seedlots and therefore, it can not be determined if seedlings were planted in the correct seedzone. Canfor is working with Sustainable Resource Development (ASRD) to reconcile the seedzones and will be able to report once this is complete (expected in the 2008 Annual Performance Monitoring Report).

In spite of the issue noted above, Canfor did not meet this target overall. A large variance request was sent to ASRD in May 2007 in response to the movement of harvest areas due to Mountain Pine Beetle infestation, but an official approval was not received.

Critical Element (1.4): Protected Areas & Sites of Special Biological Significance

Respect protected areas identified through government processes. Identify sites of biological significance within the DFA and implement management strategies appropriate to their long-term maintenance.

Value (1.4) 1: Identified protected areas and sites that have special biological significance. **Objective (1.4) 1a:** The natural states and processes to maintain protected areas and sites that have special biological significances will be conserved.

Indicator (1.4) 1a.1: Percentage of significant wildlife mineral licks conserved.

| Target (1.4) 1a.1.1: | Acceptable variance: | |
|--|----------------------|------|
| 100% of significant wildlife mineral licks will be conserved annually. | Zero. | 1.50 |

Status: Meets

Canfor establishes 100-meter buffers on identified, significant "natural" mineral licks. ASRD does not require buffers on "man-made" licks (usually a result of seismic activity, in which case the seismic company is responsible for capping holes).

In 2007, 4 significant "natural" mineral licks were identified (Table 7) and 100% of them were conserved. These sites were buffered in the field and mapped to ensure harvesting did not occur within them. Buffers adjacent to harvest areas comply with operating ground rules.

| | Mineral Licks – Natural (Buffered) |
|-------------------------|------------------------------------|
| 2003 and previous years | 60 |
| 2004 | 16 |
| 2005 | 15 |
| 2006 | 8 |
| 2007 | 4 |
| Total | 103 |

Table 7. Natural Mineral Licks Buffered





Figure 2. Natural Mineral Lick Buffered in 2006

Indicator (1.4) 1a.2: Percentage of identified protected area and special biological significant sites that are conserved.

| Target (1.4) 1a.2.1: | Acceptable variance: |
|---|----------------------|
| 100% of identified protected areas and special biological | Zero. |
| significant sites will be conserved annually. | |

Status: Meets

Spatial analysis of the Dunvegan West Wildlands, parabolic sand dunes, watercourse buffers, wildlife mineral licks, trumpeter swan buffers, and historical resources was conducted and 100% of these sites were conserved by not harvesting within them (Table 8).

| Classification | Identifier | 2006 | 2007 | % FMA area ¹ |
|---|--|-------------------|-------------------|-------------------------|
| Protected areas | Dunvegan West Wildland Park | 4471 ha | 4471 ha | 0.7% |
| Areas of Special Biological Significance | Parabolic sand dunes ² | 6114 ha | 6114 ha | 0.9% |
| | Watercourse buffers ³ | 39365 ha | 39355 ha | 6.1% |
| | Wildlife mineral licks | 295 ha | 299 ha | 0.05% |
| | Trumpeter swan buffers ⁴ | 3200 ha | 3200 ha | 0.5% |
| | Historical resources ⁵ | - | 70 sites | N/A |
| Notes: | • | | | |
| 1. FMA area is 649,160 ha. | | | | |
| 2. Parabolic sand dunes - area was | incorrectly reported in the SFMP (2006) | due to a typo. (6 | 6141 vs 6114). | |
| 3. Watercourse Buffers decreased I | by 10 ha due to amount of DFMP buffer | not used - see i | ndicator (1.2) 1a | a.7.1. |
| 4. Swan Buffers were revised from the | hose indicated in the SFMP (2005). | | | |
| 5. The number of sites was not repo | orted in 2006. See (6.2) 1.b.2.1 for detai | ils regarding 200 | 7 numbers. | |

| Table 8. | Protected | Areas and | Sites of | f Special | Biological | Significance |
|----------|-----------|-----------|----------|-----------|------------|--------------|
|----------|-----------|-----------|----------|-----------|------------|--------------|

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

Conserve forest ecosystem condition and productivity by maintaining the health, vitality, and rates of biological production.

Critical Element (2.1): Forest Ecosystem Resilience

Conserve ecosystem resilience by maintaining both ecosystem processes and ecosystem conditions.

Value (2.1) 1: Healthy forest ecosystem.

Objective (2.1) 1a: Factors that lead to forest ecosystem health will be identified and maintained.

Indicator (2.1) 1a.1: Percentage of identified insect and disease areas scheduled for treatment.

Target (2.1) 1a.1.1:Acceptable variance:100% of the identified insect and disease treatments will be
scheduled for treatment annually.Zero

Status: Meets

During late summer, 2006 an infestation of mountain pine beetle (*Dendroctonus ponderosae*) occurred within a significant portion of the FMA area. The map in Figure 3 shows the status of mountain pine beetle (MPB) attacks as of Dec. 11th, 2007. The level of infestation within stands is considered low at this time, with 1 to 2% of the stems within infected stands having been successfully inhabited by beetles.

In response to this situation, Canfor has, with ASRD approval, varied from the approved harvest sequence in the Detailed Forest Management Plan (DFMP) to address stands that have been infested with MPB as per ASRD guidelines. For the 2006 timber year, Canfor shifted the harvest area into the Economy South and Peace operating units in order to address the stands that were hardest hit by MPB (see Figure 1 for operating unit locations). Harvesting in the Latornel operating unit continued as scheduled in the DFMP.

| Table 9. | Percent of | Insect and | l Disease A | reas Sche | duled for T | reatment in | 2006 Timber \ | í ear |
|----------|------------|------------|-------------|------------------|-------------|-------------|---------------|--------------|
|----------|------------|------------|-------------|------------------|-------------|-------------|---------------|--------------|

| Operating Unit | MPB Areas Scheduled for Harvest (ha) | MPB Areas Harvested (ha) | Results (%) |
|----------------|---|--------------------------|-------------|
| Latornel | 0 | 0 | 100% |
| Economy South | 596.2 | 596.2 | 100% |
| Peace | 51.5 | 51.5 | 100% |
| Total | 647.7 | 647.7 | 100% |

The table below shows the comparison between the total area harvested and the area harvested that contained MPB:

| Table 10. Percent Area Harvested that Contained MPB in 2006 Timber Ye | ar |
|---|----|
|---|----|

| Operating Unit | Total Area Harvested (ha) | MPB Areas Harvested (ha) | Results (%) |
|-----------------------|---------------------------|--------------------------|-------------|
| Latornel | 565.1 | 0 | 0.0% |
| Economy South | 598.1 | 596.2 | 99.7% |
| Peace | 51.5 | 51.5 | 100.0% |
| Total | 1,214.7 | 647.7 | 53.3% |

Canfor is preparing an amendment to the Detailed Forest Management Plan to address the threat that MPB presents to the FMA area. This amendment will address a range of values as well as adhere to the requirements that ASRD has set out in it's Mountain Pine Beetle Action Plan (ASRD, 2006). ASRD is about to release several strategic documents relating to MPB. These will be available from ASRD's website (http://www.srd.alberta.ca).



Figure 3. Mountain Pine Beetle Reported Sites



Value (2.1) 2: Ecosystem resilience.

Objective (2.1) 2a: Processes that promote ecosystem resilience will be identified and maintained.

Indicator (2.1) 2a.1: Percentage of harvest areas meeting the regeneration standards as confirmed by the completion of an establishment survey.

| 100% of harvest areas meet the required regeneration standards as confirmed by completion of establishment surveys, measured on a 5-yr. rolling average.Accept Minimu will me 5-year | Stable variance: um of 90% of the harvested areas set the regeneration standards on a rolling average. |
|---|---|
|---|---|

Status: Does not meet

Eighty-eight percent of the harvest areas harvested between the 1995 to 1999 timber years met the required regeneration standards (*2007 Alberta Regeneration Survey Manual* (ASRD, 2007) by being classified as satisfactorily restocked (SR) by year 8 (coniferous) or year 5 (deciduous). Although the target for this objective was not met, most areas that did not meet the regeneration standards during the first establishment survey were retreated and/or resurveyed, as per section 142.(1) of the Timber Management Regulation. After retreatment and/or resurveying, 94% of the harvest areas harvested between the 1995 and 1999 timber years are now satisfactorily restocked to the establishment survey standards.

| Establishment Surveys ¹ | | | |
|---|--------------------|------|--|
| Stocking Status | Area Surveyed (ha) | % SR | |
| SR ³ and CSR ⁴ | 11,344 | 88% | |
| NSR ² | 1,474 | | |
| Total | 12,818 | | |
| establishment surveys completed on the FMA area from the areas harvested in the 1995-1999 timber years to obtain a five year rolling average (coniferous, mixedwood and deciduous). ³ SR - Satisfactorily Restocked - meets all requirements of the establishment survey by year 8 (coniferous) and year 5 (deciduous). ⁴ CSR - conditionally satisfactorily restocked - applies only to deciduous establishment surveys. The survey is deemed CSR if it meets one of three conditions as outlined in Section 2.2.1 Alberta regeneration manual (May 1, 2006). If CSR, a deciduous performance survey is required (see Target (2.1) 2a.2.1). | | | |
| Performance survey is required (see Target (2.1) 2a.2.1). ² NSR - not satisfactorily restocked - harvested area surveyed did not meet the requirements of the establishment survey. Only coniferous surveys completed betweer years 4-8 and deciduous surveys completed between years 3-5 were considered to determine achievement of the target. For example if a conifer harvest area was surveyed as NSR in year 6, was retreated in year 7, and then resurveyed in year 10 as SR, the hectares were still attributed to this NSR category even though the survey is valid at year 10. The purpose of the target is try to achieve SR status on all hectares here the target is try to achieve SR status on all hectares. | | | |

Table 11. Establishment Survey Results (1995 to 1999 Timber Years)

Indicator (2.1) 2a.2: Percentage of harvest areas meeting the regeneration standards as confirmed by completion of a performance survey.

| Target (2.1) 2a.2.1: 100% of harvest areas meet the required regeneration standards as confirmed by completion of performance surveys, measured on a 5-year rolling average. | Acceptable variance: Harvest areas obtaining skid clearance between March1, 1991 and April 30, 2001, for harvest areas passing performance surveys is a minimum of 85%; Harvest areas obtaining skid clearance after April 30, 2001 for harvest areas passing performance surveys is a minimum of 95%. |
|---|--|
| 이 것은 것 것 것 것 같아요. 그 말에서 것은 것 것 것 것 같아요. | |

Status: Does not meet

For this reporting period, results are only available for the first 3 years of the 5-year target (1991 to 1993 timber years). Complete results for the first 5-year period will be available following completion of performance surveys for the 1995 timber year, due in May 2010.

Current silviculture practices have evolved to address the factors that led to plantation failures in areas harvested in the early 1990's. The success of these practices is evident as there has been a 5% increase in the rolling average in one year, from 76% in the 2006 *Annual Performance Monitoring Report* to 81% (Table 12).

In addition, Canfor is currently engaged in the development of Alternate Regeneration Standards (ARS) under the direction of the Alberta government that will provide a direct linkage between actual regeneration performance and growth and yield projection models used in the determination of annual allowable cut.

| Performance Surveys ¹ | | | | |
|--|-------------------------|---------------------|--|--|
| Stocking Status | Area Surveyed (ha) | %SR | | |
| SR ² | 6,818 | 81% | | |
| NSR ³ | 1630 | | | |
| Total | 8,447 | | | |
| ¹ Performance Surveys - This report is based on a 3-year rolling average, as only 3 years | | | | |
| of harvest areas were due for survey (1991, 1992, & 1993 timber years). | | | | |
| ² SR - Satisfactory restocked - has met all performance survey requirements including | | | | |
| Free to Grow (FTG). | | | | |
| ³ NSR - not satisfactorily restocked - | - harvested area survey | ed did not meet the | | |
| requirements of the performance survey. | | | | |

Table 12. Performance Survey Results (1991 to 1993 Timber Years)

Critical Element (2.2): Forest Ecosystem Productivity

Conserve ecosystem productivity and productive capacity by maintaining ecosystem conditions that are capable of supporting naturally occurring species.

Value (2.2) 1: Sustained forest ecosystem productivity.

Objective (2.2) 1a: Ecosystem conditions that sustain productivity will be identified and maintained.

Indicator (2.2) 1a.1: Percentage of productive areas, adjacent to proposed harvest boundaries, impacted by windfall that receives a silviculture prescription annually.

Target (2.2) 1a.1.1:Accell100% of the productive areas, adjacent to proposed harvest
area boundaries, impacted by windfall receive a silviculture
prescription annually.Accell

Acceptable variance: Zero

Status: Meets

During the 2006 timber year, there were no reported instances of measurable windfall within productive areas. *A Windfall / Non Forest Land Strategy* (Canfor, 2004) was developed in April 2004 and revised in July 2004. The strategy continues to be used to address windfall salvage opportunities.

Indicator (2.2) 1a.2: Percentage of reforestation of temporary "in block" roads used for extraction of timber.

| Target (2.2) 1a.2.1: | Acceptable variance: |
|---|--|
| 100% of temporary "in block" roads used for extraction of | Zero for the percentage of roads |
| timber will be reforested within 18 months after the end of | reforested. |
| the timber year of harvest. | Timing of reforestation is +10 months. |

Status: Does not meet

Canfor's Forest Management Advisory Committee (FMAC) approved a change in the acceptable variance of this target from 6 months to 10 months, which would allow additional spring/summer months in which planting could occur.

For areas harvested during the 2005 timber year, roads and debris pile locations were planted within 18 months on 55.1% of the area. Planting occurred on 43.5% of the remaining area within 28 months. Planting of roads and debris pile locations on a single harvest area, accounting for 1.4% of the total area, was not completed within 28 months, due to a shortage of seedlings for that seedzone. That harvest area will be planted in the spring of 2008.

The figures reported for 2004 in the previous report were reported incorrectly and are now reported correctly in Table 13. Both sets of numbers do not meet this target.

| Timber Year | # Harvest Areas | Harvest Areas Planted Within 18 Months (%) | Harvest Areas Planted 19-28 Months (%) | Harvest Areas Planted Greater than 28 Months (%) | Total (%) |
|----------------|--------------------|--|--|--|--------------|
| 2004 | 114 | 20.7% | 74.1% | 5.2% | 100% |
| 2005 | 69 | 55.1% | 43.5% | 1.4% | 100% |

Table 13. Percentage of "In-Block" Roads Planted Within 18 Months

Indicator (2.2) 1a.3: Percentage of tasks outlined in the approved Growth and Yield Monitoring Plan (GYMP) completed on schedule.

| Target (2.2) 1a.3.1: | Acceptable variance: |
|---|---|
| 100% of tasks outlined in the approved Growth | A variance of + 6 months is acceptable on the |
| and Yield Monitoring Plan are completed on | implementation of the schedule of tasks outlined |
| schedule. | in the approved growth and yield monitoring plan. |

Status: Meets

The purpose of the Growth and Yield Monitoring Plan (GYMP) is to utilize the data derived from field measurements of established plots and other samples to establish future annual allowable cut¹² calculations and validation of present yield¹³ predictions and reforestation performance. The growth and yield programs are critical to the development of the next Detailed Forest Management Plan (DFMP).

The following activities occurred in 2007:

- Establishment of 5 permanent sample plots (PSPs) in black spruce leading stands;
- Re-measurement of 191 PSPs;
- Establishment of 103 Post Harvest Regenerated (PHR) stand plots (growth and yield monitoring plots);
- Met the requirements of the Standards for Tree Improvement in Alberta (ASRD, 2005) by tagging numbering and recording all genetically improved trees during installation of new growth and yield monitoring plots;
- Continuation of Regenerated Stand Site Productivity Project;
- Active membership in the Foothills Growth and Yield Association, Western Boreal Growth and Yield Association and Mixedwood Management Association;
- Participation in the establishment of a provincial Growth and Yield Projection System; and
- Participation on Alternative Regeneration Standards in developing a program that links regeneration to Growth and Yield.

Two of the PHR strategies listed in the 2005 SFMP have been modified:

- 1. The action to record crop tree origin during regeneration surveys has been replaced with the collection of crop tree origin during the establishment and measurement of the PHR plots. The amount of ingress coming in from harvesting is best suited to be calculated through this method.
- 2. The action to use PSP stem analysis data to develop localized growth-intercept equations is now being completed in conjunction with the Regeneration Stand Productivity Project. The PSP stem analysis will be completed for the next DFMP.

¹² Annual Allowable Cut: the volume of wood (m³) that can be harvested in one year from any area of forest under a sustained yield management regime.

¹³ Yield: the volume of wood that can be removed that is equal to growth within the total forest.

5. Criterion 3: Conservation of Soil and Water Resources

Conserve soil and water resources by maintaining their quantity and quality in forest ecosystems.

Critical Element (3.1): Soil Quality and Quantity

Conserve soil resources by maintaining soil quality and quantity.

Value (3.1) 1a: Soil productivity.

Objective (3.1) 1a: Soil productivity will be maintained or enhanced. **Indicator (3.1) 1a.1:** Site Index¹⁴

| greater than the pre-harvest site indices. | Target (3.1) 1a.1.1: Average accumulated post harvest site index will not be less than average pre harvest site index (with reporting commencing in 2008). | Acceptable variance: 90% confidence interval on the average difference between pre and post-harvest site indices must include zero or indicate that the post-harvest site indices are significantly greater than the pre-harvest site indices. |
|--|--|---|
|--|--|---|

Status: Not a scheduled reporting period.

Reporting of this target will begin in the 2008 Annual Performance Monitoring Report.

Value (3.1) 2: Soil quantity

Objective (3.1) 2a: Soil erosion will be minimized.

Indicator (3.1) 2a.1: Number of slumping events caused by road construction.

| Target (3.1) 2a.1.1: | Acceptable variance: |
|--|----------------------|
| Zero major slumping events annually caused by road | Zero |
| construction. | |

Status: Meets

Mass wasting within the FMA area is classified according to the quantity of soil impacted. The three categories are:

- Road grade cut failures $\leq 100 \text{ m}^2$;
- Minor slumps affecting \leq 2500 m²; and
- Major slumps affecting >2500 m².

Inspections indicate there were no new major slumps caused by road construction in 2007. Table 14 lists the minor slumps that were identified or monitored in 2007.

¹⁴ Site index: A measure of forest site productivity expressed as the average height of the tallest trees in the stand at a defined index age. Common Index ages are 40, 50, 70, 75, and 100 years. This is usually expressed as the predicted height for a specific tree species at a given breast height age.

| Road | Legal Description | GENUS Station | Date of Original Slump | Size (m²) | 2007 Inspection |
|--------------------------------------|-------------------|-------------------|------------------------------|--------------|--|
| Big Mountain One- Way (LOC 1206) | TWP 70 RGE 5 W6M | 17+100 | 1999 | 200 | No further movement noted. |
| Norris Road (LOC 971399) | TWP 59 RGE 5 W6M | 14+444 | 2000 | 250 | Wet + seeping water to ditchline. Movement limited, continue to monitor. |
| Norris Road (LOC 971399) | TWP 59 RGE 5 W6M | 15+430 | 2001 | 200 | No major movement noted. Site is wet with old cracks and slumps. |
| Ridge Road (LOC 030770) | TWP 60 RGE 4 W6M | 7+659 | 2004 | 300 | Vegetation establishing, some minor settling continuing. |
| Waskahigan Mainline (LOC 1292) | TWP 64 RGE 1 W6M | 0+506 | 2004 +2005 | 200 | Slow creep continues. No new major cracking. Veg established, no erosion concerns. Remediation pending funding again. |
| Bolton Main (LOC 033475) | TWP 59 RGE 4 W6M | 0+100 to 1+100 | 2005 | 100 | Ditch slumped in and full is in some sections. 2 slumps into hillside require sloping and further monitoring. Vegetation not establishing very well despite hydroseeding |
| Bolton Main (LOC 033475) | TWP 59 RGE 4 W6M | 2+000 | 2005 | 250 | Hydroseed establishing. Minor slumping at toe of slope into ditch. Clean ditch if it continues. |

Indicator (3.1) 2a.2: Number of slumping events due to harvesting activities.

| Target (3.1) 2a.2.1: | Acceptable variance: |
|---|---|
| Zero slumping events annually due to harvesting activities. | 1 slump \leq 100 m ² annually. |

Status: Meets

Aerial and ground surveys conducted in the 2007 timber year indicate that harvesting activities have caused no slumps on steep or sensitive sites.

| Indicator (3.1) 2a.3: | Number of significat | nt erosion events | ¹⁵ related to sil | iviculture, harvesting | J, |
|-----------------------|----------------------|-------------------|------------------------------|------------------------|----|
| and road activities. | | | | | |

| Target (3.1) 2a.3.1: | Acceptable variance: |
|---|------------------------------|
| Zero significant erosion events related to siliviculture, | Less than 5 events per year. |
| harvesting, and road activities annually. | |

Status: Meets

Canfor conducts annual inspections on License of Occupation¹⁶ roads. Other classes of roads are inspected during the summer, fall and winter utilizing a risk-based approach. Helicopter overview flights of harvest areas are conducted to determine the presence of surface erosion or mass wasting and to evaluate the status of debris disposal and reforestation activities. Harvesting, road construction, road maintenance and silviculture operations are monitored and inspected in accordance with the procedures set out in Canfor's Forest Management System.

¹⁵ Significant erosion event: erosion events where sediment is transported directly into a watercourse

¹⁶ License of Occupation: permanent road classes I to IV.

There was one significant erosion event in 2007. During spring runoff and significant rain events in 2007, an unnamed Class A stream (with known bull trout presence) at the kilometer 4147 bridge crossing on the Canfor 4000 road received an increased sediment load due to erosion of the road surface. This was predicted by the Stream Crossing Quality Index (SCQI) and the Water Quality Concern Rating (WQCR) Risk Analysis Project (Beaudry, 2007). Funding was unavailable to correct these concerns in 2007. Pending Canfor corporate Authorization for Expenditure (AFE) approval in 2008, the crossing will be improved to address the erosion and sedimentation occurrences.

Indicator (3.1) 2a.4: Prompt road deactivation.

| Target (3.1) 2a.4.1: | Acceptable variance: |
|---|--|
| 100% of temporary roads will be permanently deactivated | Zero. |
| within 6 months after usage is complete. | and the second second second second second |

Status: Meets

Table 15 shows the number of harvest areas for the 2006 timber year which contained and/or were accessed by temporary roads. Of the 32 harvest areas, 23 had all activities completed and 100% of the associated temporary roads were deactivated within six months. The remaining 9 harvest areas are still active as they contain deciduous inventory. Their associated temporary roads have been temporarily deactivated, and will be permanently deactivated following the delivery of the inventory wood in the 2007 timber year.

In addition, the *Canfor Erosion Control Booklet* has been revised and is now called the *Erosion and Sediment Control Booklet*, and was finalized in late 2007. This booklet was developed primarily as a reference for operators as they are permanently or temporarily deactivating roads.

Table 15: Harvest Areas & Temporary Roads Deactivation

| | Total Harvest Areas | Harvest Areas with Deactivation Completed within 6 Months of Last Activity | Harvest Areas with Deactivation Not Completed within 6 Months of Last Activity | Harvest Units with Activities Not Yet Complete |
|---|---------------------------|---|---|---|
| Number of Harvest Areas Containing and/or Accessed by Temporary Roads | 32 | 23 | 0 | 9 |
| Percent | 100% | 72% | 0% | 28% |

Objective (3.1) 2b: Soil will be conserved on site.

Indicator (3.1) 2b.1: Percentage of soil disturbance prescriptions that conform to Section 9.0.3 of the *Operating Ground Rules*.

| Target (3.1) 2b.1.1: | Acceptable variance: |
|---|----------------------|
| 100% of prescriptions created throughout the year conform | Zero |
| to Section 9.0.3 of the Operating Ground Rules. | |

Status: Meets

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

"9.03 Non-productive landbase created by timber harvesting operations shall not exceed 5 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 2 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*, (AFPA, 1999) 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.

Table 16 identifies planned harvest areas for the 2006 timber year with internal roads exceeding the 5% maximum site disturbance allowance as stated in *Canfor's Operating Ground Rules*. These roads were approved by ASRD as a component of the Final Harvest Plan.

Harvest Harvest Road Road Road % Area ID Length Comment Area (Ha) Area Rolling steep terrain, roading required to access 0.9 G293423 15.0 1778 5.9 wood. Internal road used to access block G293356. Rolling topography, small block size. Roading S040681 10.1 1081 0.5 5.4 required for decking. Main access R-road through block. S113477 4.8 612 0.3 6.4 Block less than 10 ha 6.2 0.4 5.8 S113494 720.00 Block less than 10 ha

 Table 16. Planned Harvest Areas that Exceed 5% Disturbance

Indicator (3.1) 2b.2: Percentage of harvest areas that do not exceed the soil disturbance prescriptions.

Target (3.1) 2b.2.1: 100% of harvest areas do not exceed the soil disturbance prescriptions annually.

Acceptable variance: ≥90% of the harvest areas do not exceed the soil disturbance prescriptions.

Status: Does not meet

Soil disturbance prescriptions are developed during the planning phase. When harvest areas and roads are laid out in the field, the amount of area planned for roads (therefore soil disturbance) within the harvest area is determined and documented in the Final Harvest Plan (FHP). Once harvesting is complete, the amount of actual area disturbed by roads is determined and compared to the FHP prescription.

Table 17 indicates that 78% (25) of the harvest areas did not exceeded the soil disturbance prescriptions, and 22% (7) of the harvest areas exceeded the prescriptions during the 2006 timber year.

Details of the 7 harvest areas that exceeded prescriptions are found in Table 18. The reasons for the variance include changes to block area for retention or other operational issues, adding additional roads to allow for more decking room or changing roads to deal with unforeseen circumstances (i.e. steep pitches, wet areas prior to freezing, etc.). Where the soil disturbance amount exceeded the prescription, Alberta Sustainable Resource Development was either informed of or approved the change. In the future, an allowance for additional roads will be built into the prescription to allow for these types of changes.

| | Total Harvest Areas | Harvest Areas that Do Not Exceed Prescription | Harvest Areas with More Soil Disturbance than Prescription |
|--------------------------|------------------------|--|---|
| Number of Harvest Areas | 32 | 25 | 7 |
| Planned Road Area (ha) | 46 | 31 | 15 |
| Actual Road Area (ha) | 46 | 29 | 17 |
| Percent of Harvest Areas | 100% | 78% | 22% |

Table 17. Percentage Harvest Areas Exceeding Soil Disturbance Prescriptions

Table 18. Harvest Areas Exceeding Soil Disturbance Prescriptions

| Harvest | Harvested | Ro | ad Allowa | ance | F | Road Area | a |
|--|--------------|----------------|---------------|-----------------|-----------------|----------------|------------------|
| Area ID | Area (ha) | Planned (%) | Actual (%) | Variance (%) | Planned (ha) | Actual (ha) | Variance (ha) |
| G310612 | 16.9 | 4.0 | 4.5 | 0.5 | 0.7 | 0.8 | 0.1 |
| S040461 | 43.6 | 3.4 | 3.7 | 0.3 | 1.5 | 1.6 | 0.1 |
| G310636 | 84.0 | 4.1 | 4.2 | 0.1 | 3.4 | 3.6 | 0.2 |
| G333693 | 51.5 | 4.3 | 5.0 | 0.7 | 2.3 | 2.6 | 0.3 |
| G220221 | 77.3 | 2.4 | 3.2 | 0.7 | 2.0 | 2.4 | 0.4 |
| S112882 | 168.4 | 2.7 | 3.1 | 0.4 | 4.5 | 5.2 | 0.7 |
| G293423 | 15.0 | 1.5 | 5.9 | 4.4 | 0.2 | 0.9 | 0.7 |
| Total Road Area (ha) Exceeding Prescriptions | | | | | | | 2.5 |

Critical Element (3.2): Water Quality and Quantity

Conserve water resources by maintaining water quality and quantity.

Value (3.2) 1: Water Quality.

Objective (3.2) 1a: Water quality will be conserved.

Indicator (3.2) 1a.1: The percentage of surveyed stream crossings identified with "High" and "Very High" WQCR¹⁷ (Water Quality Concern Rating) on forestry roads to which the participants are responsible.

| Target (3.2) 1a.1.1: | Acceptable variance: |
|---|--------------------------------------|
| Less than 10% of surveyed stream crossings on forestry | For 2007 <20% in the 'High' or 'Very |
| roads will have a "High" and "Very High" WQCR annually. | High' category; |

Status: Does not meet

The timeline below indicates the WQCR targets that have been established to 2015 at which time the overall target is to be achieved:

- 2007 <20% in the 'High' or 'Very High' category;
- 2009 <17.5% in the 'High' or 'Very High' category;
- 2011 <15% in the 'High' or 'Very High' category;
- 2013 <12.5% in the 'High' or 'Very High' category; and
- 2015 <10% in the 'High' or 'Very High' category.

Baseline data for crossings in the FMA area is found in Table 19.

¹⁷ WQCR: Water Quality Concern Rating. The WQCR is a 5-class hazard rating which indicates the level of concern for negative impacts on water quality arising from increased sediment delivery to the stream. The ratings are "none", "low", "medium", "high" and "very high". The ratings are converted from individual SCQI crossing scores. The WQCR identifies areas where crossing elements have the potential to cause sedimentation and also documents areas where effective erosion and sediment control is practiced (P. Beaudry).

| Operational | # of Crossings | No Co | ncern | L | ow | Мос | lerate | н | igh | Very | High | Combined High and |
|---------------|-------------------|-------|-------|-----|-----|-----|--------|----|-----|------|------|----------------------|
| Unit | Surveyed | # | % | # | % | # | % | # | % | # | % | Very High % |
| Deep North | 180 | 46 | 26% | 99 | 55% | 15 | 8% | 15 | 8% | 5 | 3% | 11% |
| Deep South | 45 | 9 | 20% | 22 | 49% | 5 | 11% | 7 | 16% | 2 | 4% | 20% |
| E8 | 92 | 20 | 22% | 34 | 37% | 11 | 12% | 10 | 11% | 17 | 18% | 29% |
| Economy North | 24 | 5 | 21% | 0 | 0% | 0 | 0% | 7 | 29% | 12 | 50% | 79% |
| Economy South | 39 | 1 | 3% | 7 | 18% | 8 | 21% | 9 | 23% | 14 | 36% | 59% |
| Latornell | 64 | 6 | 9% | 18 | 28% | 14 | 22% | 14 | 22% | 12 | 19% | 41% |
| Puskwaskau | 8 | 1 | 13% | 0 | 0% | 1 | 13% | 2 | 25% | 4 | 50% | 75% |
| Simonette | 45 | 17 | 38% | 19 | 42% | 5 | 11% | 2 | 4% | 2 | 4% | 9% |
| Smoky | 183 | 49 | 27% | 72 | 39% | 25 | 14% | 16 | 9% | 21 | 11% | 20% |
| TOTALS | 680 | 154 | 23% | 271 | 40% | 84 | 12% | 82 | 12% | 89 | 13% | 25% |

Table 19. Summary of 2003-2005 WQCR Results in the FMA Area (Baseline Data)

For 2007, 23% of the stream crossings surveyed continued to be in the High and Very High categories. This is an improvement of 2% from the 2005 baseline data (when 25% of the stream crossings surveyed were in the High and Very High categories) but above the acceptable variance of 20%. Table 20 shows the 2007 data results.

Table 20. Summary of High and Very High WQCR Results Updated for 2007

| Operational Unit | # of Crossings | High Remedia 2005-20 | ated 007 | Very Hig Remedia 2005-20 | gh ted 07 | 2007 Combined High and | Improvement % |
|------------------|-------------------|----------------------------|---------------|--------------------------------|-----------------|------------------------------|------------------|
| | Surveyeu | # High Remaining | % for 2007 | # very High Remaining | % for 2007 | % very High | |
| Deep North | 180 | 12 | 7% | 5 | 3% | 9% | 2% |
| Deep South | 45 | 7 | 16% | 2 | 4% | 20% | 0% |
| E8 | 92 | 10 | 11% | 17 | 18% | 29% | 0% |
| Economy North | 24 | 7 | 29% | 12 | 50% | 79% | 0% |
| Economy South | 39 | 9 | 23% | 14 | 36% | 59% | 0% |
| Latornell | 64 | 12 | 19% | 8 | 13% | 31% | 9% |
| Puskwaskau | 8 | 1 | 13% | 2 | 25% | 38% | 38% |
| Simonette | 45 | 2 | 4% | 2 | 4% | 9% | 0% |
| Smoky | 183 | 16 | 9% | 18 | 10% | 19% | 2% |
| TOTALS | 680 | 76 | 11% | 80 | 12% | 23% | |

Between 2005 and 2007, 23 crossings received remediation, which resulted in 15 crossings being removed from the High or Very High categories. The remaining crossings improved their individual scores, but not enough to drop below the High category ranking. Further improvement at several crossings is likely to occur with additional time to allow re-vegetation of bare soil areas. Re-assessment of numerous crossings is planned in 2008 to update individual crossing scores.

Scheduling of 2008 and 2009 remediation plans will be based on the WQCR risk analysis rankings, subject to available budget.

| Table 21. | Action Plan | Progress to | Achieve | WOCR | Targets |
|-----------|-------------|--------------|---------|-------------|---------|
| | Action Flam | 1 1091033 10 | ACINEVE | NGOI | rargets |

| Action | Completion Date | Comment |
|--|--------------------|--|
| By September 30, 2005, inspect the deactivation work that was completed in E8 in 2004. Sample the crossings that were removed using the SCQI methodology to determine the impact on the WQCR for this area. | September 2005 | Crossings sampled and improvements were realized as per crossing scores. Additional vegetation growth will improve scores. |
| By September 30, 2005 prepare a 10 year program to achieve the target and include Year 1 in the Business Plan. | October 2005 | The 10 Year Program is under revision based on the results of the Risk Analysis Project which was completed May 2007. Further updates and revisions may be required periodically due to financial constraints. |
| By December 31, 2006, in conjunction with the Forest Engineering Research Institute of Canada (Feric), update the erosion control procedures booklet for new crossing construction and deactivation standards. | March 2007 | Feric's "Erosion and sediment control practices for forest roads and stream crossings A practical operations guide" was published in December 2007. The Canfor Erosion Control Booklet was completed in Dec 2006 with final edits and printing July 2007 (Figure 4). |
| By October 31, 2005, complete the SCQI improvement projects identified in the Road Maintenance Plan. | May 2006 | 2005 SCQI projects complete. WQCR targets and associated projects ongoing to 2015. The SCQI / Fish Habitat Risk Analysis Report was completed in May 2007. The 10 year remediation program is being revised based on the report. |
| By December 31, 2005, complete the 2005 SCQI Monitoring and Surveying program. | February 2006 | Final Report received February 2006. |
| By May 01, 2006, in conjunction with PBA, develop a training plan for Canfor employees or contractors so they can conduct SCQI surveys at sites that receive remedial work. | May 2006 | Training Manual and Field Guide developed. Two training sessions held in May 2006 for Canfor employees, contractors, oil/gas, environmental, and other forestry workers. |
| By May 01, 2006, develop a method to monitor the results of the work in the field compared to the SCQI baseline. | May 2007 | Results will be monitored in Excel database, with inspection data tracked in GENUS. |

With the assistance of P. Beaudry and Associates, the Canfor Erosion and Sediment Control Booklet was published in July 2007. The booklet was distributed to Canfor staff and contractors.



Figure 4. Erosion and Sediment Control Booklet



The project to prioritize stream crossing remediation was completed by P. Beaudry and Associates Ltd. in May 2007 with the report *"Risks to Fish Habitat Caused by Increases in the Delivery of Fine Sediment at Stream Crossings"*. The project involved risk assessment of detrimental effects to fish habitat caused by increases in the delivery of fine sediment.

The project had two outcomes:

- 1. Refinement and implementation of a risk assessment procedure to classify stream crossings in the FMA area relative to the potential to negatively impact fish habitat caused by increases in fine sediments.
- 2. Prioritization of stream crossing remediation works based on the risk assessment and the complexity of potential remedial solutions.

The results amalgamated several sources of information and data sets ranging from fish habitat and fish presence surveys, fish habitat modeling, and SCQI surveys. The database now provides a more simplified and logical prioritization of crossing remediation as they are based upon a summarization of the valuable scientific information collected.

The new information from the study has shifted some of the crossing rankings from high priority to a lower status because there is a low consequence to the stream if it receives sediment. This may be because there is no, or low probability, of fish presence. Some crossing rankings have also shifted priority due to financial considerations.

Indicator (3.2) 1a.2: The percentage of crossings that receive the required remedial action.

| Target (3.2) 1a.2.1: | Acceptable variance: |
|--|-------------------------------------|
| 100% of crossings receive remedial action as identified in | Minimum of 90% of crossings receive |
| the Road Management Plan annually. | remedial action. |

Status: Does not meet

Of the 69 planned maintenance activities on crossings, 24 (35%) of activities were completed.

Budget constraints limited the number of activities that could be completed, but the activities will remain scheduled for action and be completed as budgets allow.

Table 22. Road Remedial Actions Planned and Completed in 2007

| Maintenance Activities Planned | Activities Completed | Percentage |
|-----------------------------------|-------------------------|------------|
| 69 | 24 | 35% |

Indicator (3.2) 1a.3: The number of non-compliance incidents related to riparian zone standards.



Status: Meets

There were no non-compliance incidents relating to riparian zone standards in 2007.

Additionally, it was reported in the previous report that there was a single non-compliance issue resulting in the target reporting a "does not meet". This was an error, as the non-compliance issue occurred off the FMA area and is therefore not applicable to this report.

Value (3.2) 2: Water Quantity.

Objective (3.2) 2a: Water quantity will be maintained.

Indicator (3.2) 2a.1: Percentage of sampled watersheds that are in conformance with the average water yield increase limit indicated in Canfor's *Operating Ground Rules* (ASRD, 2005).

| Target (3.2) 2a.1.1: | Acceptable variance: |
|---|---|
| 100% of sampled watersheds are in | Total forest cover removal within a defined |
| conformance with the annual average water | watershed will not cause an increase in annual |
| yield increase limit of 15% as indicated in the | average water yield of greater than 20% for a |
| Operating Ground Rules. | minimum of 10 of the highest Equivalent Clearcut Area (ECA) watersheds in the FMA area. |

Status: Meets

Water yield percentages were calculated using planned harvest areas as of October, 2007 for the 10 highest ECA % watersheds. Results shown in Table 23 indicate there was no water yield increases above 15%.

| Table 23. Av | erage Water Yield | Increase (%) | for the 10 Hig | hest ECA Watersheds |
|--------------|-------------------|--------------|----------------|---------------------|
|--------------|-------------------|--------------|----------------|---------------------|

| | Alberta-ECA Method | | |
|----------------------|------------------------------|-------------------------------------|--|
| Sampled Watershed | 2007 10 Highest ECA(%) | Average Water Yield Increase (%) | |
| 2057 | 38.5% | 5.1% | |
| 1775 | 36.8% | 7.6% | |
| 5642 | 33.7% | 4.5% | |
| 5340 | 33.4% | 7.7% | |
| 5123 | 33.0% | 6.8% | |
| 10003 | 32.6% | 13.0% | |
| 4826 | 32.3% | 4.0% | |
| 5125 | 31.9% | 7.5% | |
| 4846 | 28.7% | 7.4% | |
| 6306 | 28.2% | 12.5% | |



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

Maintain forest conditions and management activities that contribute to the health of global ecological cycles.

Critical Element (4.1): Carbon Uptake and Storage

Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems.

Value (4.1) 1: Local contribution of carbon uptake and storage.

Objective (4.1) 1a: Carbon uptake and storage (i.e. carbon balance) will be maintained. **Indicator (4.1) 1a.1:** Percentage of harvested areas reforested.

| Target (4.1) 1a.1.1: | Acceptable variance: |
|---|----------------------|
| 100% of harvest areas are reforested within 18 months after | +3 months. |
| the end of the timber year in which it was harvested. | |

Status: Meets

All areas harvested during the 2005 timber year were planted within 18 months of harvest.

| Timber Year | # of Harvest Areas | # of Harvest Areas Planted Within 18 Months | Percentage Reforested Within 18 Months |
|-------------|-----------------------|--|---|
| 2000 | 130 | 130 | 100% |
| 2001 | 136 | 136 | 100% |
| 2002 | 127 | 127 | 100% |
| 2003 | 126 | 126 | 100% |
| 2004 | 83 | 76 | 92% |
| 2005 | 100 | 100 | 100% |

Table 24. Harvested Areas Reforested Within 18 Months

Indicator (4.1) 1a.2: Percentage of productive areas > 4 hectares impacted by fire within 24 months.

| Target (4.1) 1a.2.1: | Acceptable variance: |
|---|---|
| Reforest 100% of the productive areas > 4 hectares impacted by fire within 24 months. | Reforest at least 90% of productive areas > 4 hectares impacted by fire within 24 months. |

Status: Meets

Burned areas greater than 4 hectares in area are tracked in Canfor's tracking database along with associated regeneration information. In 2002, 2 wildfires greater than 4 hectares occurred on the FMA area (Table 25). The impacted areas have been reforested and regeneration surveys to assess seedling establishment are scheduled for 2008. In 2006, 2 wildfires greater than 4 hectares occurred. Fire 136 (10 hectares) burned parts of a previously reforested area (2.0 ha) and was replanted in the summer of 2007. Fire 139 (416 hectares) occurred in marginally merchantable and un-merchantable standing timber and was not salvaged due to the small tree size and high intensity of the burn. Canfor received a salvage waiver for this burn (authority from the government to not salvage the timber from the burn). The site was assessed in June 2007 and 339 ha were planted in August 2007. Both sites will be assessed in October 2009 to determine if any stand tending treatments are required.

| Canfor Fire Name | Area to Reforest (ha) | Year Burned | Reforested | Survey Planned |
|------------------|-----------------------|--------------|-----------------|----------------|
| Fire 20 | 28.6 | June 1, 2002 | August 1, 2002 | August 1, 2008 |
| Fire 21 | 14.3 | June 1, 2002 | July 1, 2003 | August 1, 2008 |
| Fire 136 | 2 | July 1, 2006 | August 18, 2007 | August 1, 2012 |
| Fire 139 | 339 | July 1, 2006 | August 31, 2007 | August 1, 2012 |

| Table 25. Reforestation Status of FMA Burned Areas Greater than 4 Hectares in A |
|---|
|---|

Table 26 below depicts all fires that occurred on the FMA area in 2007. There were no fires in excess of 4 ha.

| Fire Identifier | Total Hectares |
|-------------------------|----------------|
| GWF013 | 0.50 |
| GWF015 | 0.40 |
| GWF030 | 0.01 |
| GWF033 | 0.01 |
| GWF036 | 0.01 |
| GWF044 | 0.01 |
| GWF052 | 0.01 |
| GWF055 | 0.01 |
| GWF051 | 0.60 |
| GWF056 | 0.02 |
| GWF057 | 0.01 |
| GWF053 | 0.10 |
| GWF059 | 0.05 |
| GWF058 | 0.02 |
| GWF060 | 0.01 |
| GWF054 | 0.10 |
| GWF064 | 0.03 |
| GWF069 | 0.20 |
| GWF072 | 0.01 |
| EWF087 | 0.01 |
| GWF084 | 0.50 |
| GWF085 | 0.01 |
| GWF087 | 0.01 |
| Total Hectares for 2007 | 2.64 |

| Table 26. | 2007 | Fires | on | the | FMA |
|-----------|------|-------|----|-----|------------|
| | | | | | |

Critical Element (4.2): Forest Land Conversion

Protect forestlands from deforestation or conversion to non-forests.

Value (4.2) 1: Sustainable yield of timber.

Objective (4.2) **1a:** A natural range of tree species will reforest every hectare that is harvested.

Indicator (4.2) 1a.1: Percentage of the harvested area sufficiently restocked by yield group.

| Target (4.2) 1a.1.1: | Acceptable variance: |
|---|---|
| 100% of the harvested area sufficiently restocked by yield group accumulated annually beginning in 2000. | +/- 10% of harvested areas (accumulated annually) will be sufficiently restocked by |
| | yield group. |

Status: Does not meet

Canfor made a commitment within the Detailed Forest Management Plan (DFMP) to compare planned versus actual reforestation by yield group accumulated annually, beginning in 2000. Table 27 represents regeneration data for applicable yield groups for the period 2000 to 2007, inclusive. Of the 9 yield groups listed; yield groups 2,8,11, & 16 are within the acceptable variance of 10%, and yield groups 3, 9,12,14,& 17 do not meet the acceptable variance.

The methodology used in the 2006 *Annual Performance Monitoring Report* to analyze the planting data was modified to evaluate species percent differentiation so that planting units with more than one species could be allocated to more specific yield groups. As a result, yield groups such as 14,12, 9 and 17 changed dramatically from what was reported in 2006.

As more area is harvested and regenerated in each yield group, the variance percentages will decline. Silviculture staff continues to work on strategies to align yield groups within acceptable variances.

| | | Coniferous Yield Group (ha) | | | | | | | | |
|---------------------------------|-------|-----------------------------|-------|--------|-------|-------|--------|-------|-------|--------|
| | | | | 9 | 11 | | 14 | | | |
| | 2 | 3 | 8 | PLAW/A | PLSW/ | 12 | SBPL / | 16 | 17 | |
| | AW | AWSW | PL | WPL | SWPL | SB | SBSW | SW | SWAW | TOTAL |
| Regenerated Yield Group (AVI) | 1,912 | 1,129 | 4,801 | 399 | 1,011 | 1,467 | 974 | 5,403 | 2,276 | 19,372 |
| Treated Regenerated Yield Group | 2,054 | 1,009 | 5,277 | 503 | 1,115 | 1,227 | 394 | 5,965 | 1,828 | 19,372 |
| Percent Difference | 7% | -11% | 10% | 26% | 10% | -16% | -60% | 10% | -20% | 0% |

 Table 27. Balancing Yield Groups within FMA Area

Objective (4.2) 1b: The utilization of merchantable wood will be maximized.

Indicator (4.2) 1b.1: Percentage of harvested merchantable wood (conifer and deciduous) left on site.

| Target (4.2) 1b.1.1: | Acceptable variance: |
|--|---|
| To leave less than 1% conifer and 1% deciduous harvested | Zero |
| merchantable wood on site annually. | a a share a shere a shere a shere a shere a shere a |

Status: Not scheduled reporting time

Waste surveys are conducted every second year. The results from the 2006 survey indicate the average merchantable waste was 0.74% for coniferous and 0.81% for deciduous. The next waste survey is scheduled for 2008. Figure 5 indicates waste levels.







Indicator (4.2) 1b.2: Percentage of dispositions where merchantable industrial salvage (m³) is utilized on an annual basis.

| 100% of the dispositions where merchantable industrial At least 90% of salvage wood from permanent land withdrawals is utilized on an annual basis. | dispositions where volume is harvested as a nent land withdrawals. |
|---|--|
|---|--|

Status: Meets

Each request for land withdrawal received by Canfor is reviewed and if approved, a coniferous timber salvage commitment form is signed. Notification must be provided to Canfor as soon as the salvaged timber 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 in 2006 has been hauled into the mill site.

| | Disposition Year of Consent | | | | |
|--|-----------------------------|--------|---------|--------|--------|
| Year | 2002 | 2003 | 2004 | 2005 | 2006 |
| # of Dispositions Coniferous Salvage Available | 18 | 73 | 59 | 92 | 101 |
| # of Dispositions Coniferous Salvaged | 17 | 68 | 57 | 88 | 101 |
| Amount of Coniferous Salvage Wood (m ³) | 4,340 | 11,803 | 10,7643 | 21,405 | 17,986 |
| Percent of # Dispositions where Salvage Available Delivered to Mill | 94% | 93% | 97% | 96% | 100% |

Table 28. Coniferous Merchantable Industrial Salvage Wood

Value (4.2) 2: Forests on the landbase.

Objective (4.2) 2a: Forests will be maintained on the landbase. **Indicator (4.2) 2a.1:** Density (lineal km/km²) of open (non-reclaimed) roads.

| Target (4.2) 2a.1.1: To have no more than 0.6 lineal km/km ² in open (non-reclaimed) roads over a 5-year period, for each FMA parcel | Acceptable variance: Maximum of 0.7 km/ km ² for the Peace, Puskwaskau and Main |
|---|--|
| (Peace, Puskwaskau, and Main). | parcels. |

Status: Meets

2007 was another active year for the energy sector. The amount of access within the FMA area increased by 0.05 km/km2 from the 2006 *Annual Performance Monitoring Report*. Collaboration with individual oil and gas companies on future road development is continuing to minimize the amount of new road constructed and to rehabilitate abandoned roads that are not required for future access. An example of this is the development of a Integrated Industrial Access Plan by the Caribou Landscape Management Association (CLMA) wich has both forestry and energy sector members. This plan minimizes the amount of permanent roads and also contains a deactivation and reclamation plan.

| Parcel | Road (km) | Area (km ²) | Density (km/ km ²) |
|----------------|-----------|-------------------------|--------------------------------|
| Main | 2,707 | 5,514 | 0.49 |
| Peace | 181 | 281 | 0.64 |
| Puskwaskau | 230 | 697 | 0.33 |
| Total FMA area | 3,117 | 6,492 | 0.48 |

Table 29. Road Densities within the FMA Area



Objective (4.2) 2b: Productive lands will be restored to productive status wherever possible. **Indicator (4.2) 2b.1:** Percentage of withdrawn areas restored to productive forestland.

| Target (4.2) 2b.1.1: |
|---|
| 100% of previously withdrawn areas that are suitable |
| candidates for reforestation are restored to productive |
| forestland within 24 months. |

Acceptable variance: No less than 90% of suitable candidates reforested within 24 months of when the site is ready for planting.

Status: Does not meet

Canfor is working with the energy sector to develop procedures for reclaiming sites in preparation for tree planting. A component of the procedure will include prescribed timeframes for notifying Canfor when a site is ready for treatment. Table 30 shows withdrawn areas that have been planted.

Five of the 8 withdrawn areas in 2005 were planted in 2007, but 3 were not completed within 24 months. The remaining 3 withdrawn areas are scheduled for planting in spring/summer of 2008. Additionally, there were 11 withdrawn areas planted from years 2006 and 2007 (that are not yet due to be reported) and the remaining 2006 and 2007 withdrawn areas are also scheduled for planting in the spring/summer 2008.

There may need to be a review of the acceptable variance of 24 months; 30 months may be more achievable for withdrawn areas to allow sufficient time for seedling ordering for planting the following season.

| Year | Number of Withdrawn Areas Available | Number of Withdrawn Areas Planted Within 24 Months | Number of Withdrawn Areas Planted After 24 Months | Percent of Withdrawn Areas Planted Within 24 Months | Total Percent of Withdrawn Areas Planted |
|--|---|---|--|--|--|
| 2001 | 7 | 7 | 0 | 100% | 100% |
| 2002 | 27 | 27 | 0 | 100% | 100% |
| 2003 | 8 | 8 | 0 | 100% | 100% |
| 2004 | 7 | 0 | 7 | 0% | 100% |
| 2005 | 8* | 2 | 3 | 25% | 63% |
| 2006 | 16 | N/A | N/A | N/A | N/A |
| 2007 | 4 | N/A | N/A | N/A | N/A |
| * Note: There were originally 9 withdrawn areas reported available in 2005, however it was determined later that only 8 areas were withdrawn in this year. | | | | | |

Table 30. Planting of Previously Withdrawn Areas



7. Criterion 5: Multiple Benefits to Society

Sustain flows of forest benefits for current and future generations by providing multiple goods and services.

Critical Element (5.1) Timber and Non-Timber Benefits

Manage the forest to produce an acceptable and feasible mix of both timber and non-timber benefits.

Value (5.1) 1: Sustainable yield of timber.

Objective (5.1) 1a: Sustainable harvest levels on the FMA area will be maintained. **Indicator (5.1) 1a.1:** Long-term harvest levels vs. actual extraction (m³).

| Target (5.1) 1a.1.1: | Acceptable variance: |
|---|--|
| Actual extraction rates (m ³) are less than or equal to the long- | Zero. |
| term harvest level (m ³) at the end of the 1999-2008 period. | and the second |

Status: Not a scheduled reporting time

Although this target is not due to be reported until 2008, Tables 31 and 32 indicate the total harvested volumes for coniferous and deciduous timber as well as the long-term harvest levels to date.

| Timber Year | Harvested (m ³)* | Long-Term Harvest Level (m ³) | Variance (m ³) | Variance (%) | |
|---|------------------------------|---|----------------------------|--------------|--|
| 1999 | 555,038 | 640,000 | -84,962 | -13% | |
| 2000 | 644,861 | 640,000 | 4,861 | 1% | |
| 2001 | 579,200 | 640,000 | -60,800 | -10% | |
| 2002 | 626,525 | 640,000 | -13,475 | -2% | |
| 2003 | 658,898 | 640,000 | 18,898 | 3% | |
| 2004 | 465,950 | 640,000 | -174,050 | -27% | |
| 2005 | 817,405 | 640,000 | 177,405 | 28% | |
| 2006 | 575,881 | 640,000 | -64,119 | -10% | |
| Total | 4,923,758 | 5,120,000 | -196,242 | -4% | |
| * The harvested volumes for 2005 were reconciled in 2006/07 season based on a government audit. In addition, local Local Timber | | | | | |

Table 31. Coniferous Harvest Levels

* The harvested volumes for 2005 were reconciled in 2006/07 season based on a government audit. In addition, local Local Timber Permit (LTP) volumes harvested required adjustment from 1999 onward. This is reflected in the revised harvested volumes for the entire table.

Table 32. Deciduous Harvest Levels

| Timber Year | Harvested (m ³)** | Long-Term Harvest Level (m ³)* | Variance (m ³) | Variance (%) |
|---|-------------------------------|--|----------------------------|--------------|
| 1999 | 151,072 | 226,312 | -75,240 | -33% |
| 2000 | 230,148 | 226,312 | 3,836 | 2% |
| 2001 | 179,797 | 226,312 | -46,515 | -21% |
| 2002 | 159,916 | 226,312 | -66,396 | -29% |
| 2003 | 145,399 | 226,312 | -80,913 | -36% |
| 2004 | 228,729 | 226,312 | 2,417 | 1% |
| 2005 | 172,837 | 226,312 | -53,475 | -24% |
| 2006 | 247,158 | 453,712 | -206,554 | -46% |
| Total | 1,515,056 | 2,037,896 | -522,840 | -26% |
| ** The harvested volumes for 2005 were reconciled in 2006/07 season based on a government audit. In addition, local Local Timber Permit (LTP) volumes harvested required adjustment from 1999 onward. This is reflected in the revised harvested volumes for the | | | | |

Permit (LTP) volumes harvested required adjustment from 1999 onward. This is reflected in the revised harvested volumes for the entire table.

*Although the long term harvest levels for deciduous are approved in the DFMP at 453,712 m³, the ASRD finalized deciduous allocations are reported to date showing the deciduous long-term harvest level as 226,312 m³ until the 2006 timber year.



Value (5.1) 2: Ongoing non-timber benefits.

Objective (5.1) 2a: Long-term availability of identified non-timber benefits will be maintained. **Indicator (5.1) 2a.1:** Number of recreation areas maintained by Canfor.

| Target (5.1) 2a.1.1: | Acceptable variance: |
|--|----------------------|
| Canfor will maintain a minimum of 5 recreation areas for use | Zero. |
| by the public annually. | |

Status: Meets

Canfor Grande Prairie maintains 4 public recreational areas (Figure 6) within the FMA area, and 1 site outside the FMA area, located approximately 25 km west of Valleyview:

- MacLeod Flats (formerly Smoky Flats);
- Economy Lake;
- Frying Pan Creek;
- Westview; and
- Swan Lake (outside FMA area).

A typical site includes camping stalls, picnic tables, firewood, garbage receptacles and pit toilets. MacLeod Flats and Economy Lake also have well water, which must be boiled before using. All camping sites and firewood are currently provided free of charge.

In July 2007 Canfor, Alberta Sustainable Resource Development and Alberta Tourism, Parks, Recreation and Culture (ATPRC) signed an agreement to cooperatively fund, manage and operate the Swan Lake Recreation Area. This agreement provides interim management while all three parties and other interested stakeholders work towards protected area status for the lands in the immediate vicinity of Swan Lake. With protected status, ATPRC can create a provincial recreation area for Swan Lake. Upon gaining protected status an updated management plan would be developed by ATPRC to address the new lands and direct any development.

In order to promote public use of its sponsored recreation areas, Canfor Grande Prairie Division publishes a pamphlet titled, *Canfor Public Recreation Areas* that is available through the Grande Prairie Tourism Association, Muskoseepi Park and Canfor's Grande Prairie administration office.









Indicator (5.1) 2a.2: Percentage of registered trappers contacted that are directly impacted by operations (harvesting, silviculture, and reclamation).

Target (5.1) 2a.2.1: 100% of registered trappers directly impacted by harvesting, siliviculture, and reclamation operations are contacted as specified in the *Trappers Consultation and Notification Program* annually.

Acceptable variance:

Zero, provided that Canfor and registered trappers make reasonable provisions that allow effective consultation and/ or notification.

Status: Does not meet

The *Trappers Consultation and Notification Program* (Canfor, 2004) provides direction to Canfor supervisors regarding consultation and notification registered trappers.

For the 2006 timber year, 100% of registered trappers were consulted regarding activities scheduled to occur on their traplines during the planning stage.

During the same timber year, harvesting, site preparation and reclamation activities were carried out on registered trapline areas of 4 registered trappers, however 3 of the trappers were not notified within the specified period (greater than 30 days). These trappers were notified in the form of personal notification or by mail, but within less than 30 days.

Canfor notified 100% (32) of the registered trappers regarding vegetation management activities scheduled to occur in 2007 on their trapline areas.

Indicator (5.1) 2a.3: Percentage of outfitters potentially affected by operations within the FMA area are informed of the 5-year harvest sequence.

| Target (5.1) 2a.3.1: | Acceptable variance: |
|--|--|
| 100% of outfitters potentially affected by operations within the | Zero |
| FMA area will be supplied a 5-year General Development Plan | and the second |
| map annually. | |

Status: Meets

All outfitters with licensed territories within the FMA area were mailed a 5-year General Development Plan (GDP) map in June 2007. Canfor did not receive any requests or feedback from those outfitters contacted.

Critical Element (5.2): Communities and Sustainability

Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and to participate in their use and management.

Value (5.2) 1: A range of benefits to local communities.

Objective (5.2) 1a: Local communities and contractors will have the opportunity to share in benefits such as jobs, contracts and services.

Indicator (5.2) 1a.1: Percentage of dollars paid for local vs. non-local contract services.

| Target (5.2) 1a.1.1: | Acceptable variance: |
|---|-------------------------------------|
| Over a rolling 5-year period, a minimum of 75% of dollars | Zero. |
| paid for contract services will be expended locally. | in a share we are a share share she |

Status: Meets

Table 33 indicates the local versus non-local contract service dollars expended since 2002. During the 5-year period from 2003 to-2007, 84.2% of the dollars paid for contract services was expended locally. This is a 0.6% increase from the previous 5-year period.

| Contribution | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|------|------|------|------|-------|-------|
| Local Contract Services (\$ millions) | 29.0 | 34.6 | 36.9 | 38.1 | 53.7 | 31.2 |
| Non-Local Contract Services (\$ millions) | 7.2 | 8.6 | 8.1 | 7.3 | 6.6 | 5.9 |
| subtotal | 36.2 | 43.2 | 45.0 | 45.4 | 60.3 | 37.1 |
| % Local Contractors (5 year rolling avg.) | | | | | 83.6% | 84.2% |

Table 33. Local Versus Non-local Contract Services Expenditures

Objective (5.2) 1b: The forests will be accessible to the public for social and cultural benefits. **Indicator (5.2) 1b.1:** Percentage of identified social and cultural benefits that occur in the FMA area.

| Target (5.2) 1b.1.1: | Acceptable variance: | |
|---|-------------------------------|----------|
| Maintain 100% of identified social and cultural benefits that | Zero. | S. Alter |
| occur on the FMA area annually. | a second second second second | la ser |

Status: Meets

On January 18th, 2006 Canfor's Forest Management Advisory Committee (FMAC) reviewed a list of identified social and cultural benefits prepared by Canfor and provided additional information to the company. In 2007, the social and cultural benefits indicated in Table 34 were available and accessible by the public.

Canfor does not restrict public access within the FMA area with the exception of areas where ASRD applies legal restrictions i.e. ASRD restricts vehicle traffic on some roads by requiring the installation and maintenance of gates as a means of protecting caribou populations.



| Benefit | Availability of Benefit 2007 |
|--|------------------------------|
| Recreational | |
| Hunting/fishing | \checkmark |
| Camping/picnicking/social gathering | |
| ATV'ing/snowmobiling | \checkmark |
| Walking/hiking/jogging/mountain biking/skiing | \checkmark |
| Horseback/trail riding | \checkmark |
| Boating/canoeing/kayaking/rafting | \checkmark |
| Sight seeing/wildlife watching/nature watching | |
| Nature photography/painting | |
| Berry picking/plant and rock collecting | \checkmark |
| Firewood/poles/other wood collecting | \checkmark |
| Non-recreational | |
| Trapping/outfitting/guiding | \checkmark |
| Working | \checkmark |
| Studying/researching | \checkmark |
| Small business timber harvesting | \checkmark |
| Cultural (includes Aboriginal) | |
| Traditional hunting/fishing/trapping/gathering | √ |
| Traditional plants | |
| Spiritual gatherings/activities | √ |
| Teepee poles | 1 |
| Percent Available | 100% |

Table 34. Social and Cultural Benefits Identified in the FMA Area

Critical Element (5.3): Fair Distribution of Benefits and Costs

Promote the fair distribution of timber and non-timber benefits and costs.

Value (5.3) 1: Fair distribution of benefits and costs will be ensured across communities. **Objective (5.3) 1a:** A fair distribution of benefits and costs will be ensured across all communities and contractors in the local area.

Indicator (5.3) 1a.1: Percentage of economic contributions to local communities.

| Target (5.3) 1a.1.1: | Acceptable variance: |
|--|--|
| Annual economic contributions to local communities will be a | Zero |
| minimum of 80% of the 5-year rolling average. | and the second |

Status: Meets

Canfor contributes to the local economy in the form of wages and benefits, property taxes, contract services, purchases of goods and services, and community donations. In 2007, Canfor's contribution to local communities was \$53.7 million. Table 35 indicates this is decreased to 90% of the five year rolling average (2002-2006). The decrease can be contributed to the cost cutting measures Canfor has imposed in order to maintain operations at the Grande Prairie mill. Record low lumber prices, the rise of the Canadian dollar, dramatically decreasing North American housing starts, Mountain Pine beetle infestation and a 15% export tax have combined to make this the hardest time the Alberta forest industry has ever faced.

| Contribution (millions \$) | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|------|------|------|------|-------|------|
| Wages and Benefits | 13.5 | 14.6 | 14.7 | 15.0 | 15.8 | 15.5 |
| Property Taxes | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 |
| Local Contract Services | 29 | 34.6 | 36.9 | 38.1 | 53.7 | 31.2 |
| Supplies | 4.4 | 5.5 | 6 | 6.4 | 6.6 | 6 |
| Community Donations | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total | 47.8 | 55.6 | 58.6 | 60.5 | 77.1 | 53.7 |
| Local Contribution (5-Year Rolling Average) | | | | | 59.92 | |
| % Within the 5-Year Rolling Average | ge | | 90% | | | |

| Table 35. | Contributions | to Local | Communities |
|-----------|---------------|----------|-------------|
|-----------|---------------|----------|-------------|

Indicator (5.3) 1a.2: Percentage of coniferous timber available for local use.

| Target (5.3) 1a.2.1:Acc0.5% of the coniferous AAC is made available for local use and for local residents as per FMANot9900037 annually.over 2008 31,5 | to exceed the annual allocation of 0.5% the approved coniferous AAC (640,000 m ³) r a 10-year cut control period (1999– 8), which equates to 3,152 m ³ / year or 520 m ³ for the 10 year period. |
|---|--|
|---|--|

Status: Meets

In accordance with Section 8(2)(d) of the Forest Management Agreement (FMA) (Canfor, 1999), 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 ASRD and are subject to government regulations.

Canfor and ASRD work cooperatively to identify areas for this program. Due to the fact that the volume was not required in the first few years of the cut control period (there was no demand from local loggers through ASRD), to date there has been 0.4% of the coniferous AAC utilized.

Table 36. Number of Permits issued within the FMA Area

| Timber Year Issued | Volume (m ³) |
|--------------------|--------------------------|
| 1999 | 300 |
| 2000 | 0 |
| 2001 | 80 |
| 2002 | 0 |
| 2003 | 3,892 |
| 2004 | 7,657 |
| 2005 | 1,164 |
| 2006 | 5,750 |
| 2007 | 2,740 |
| Total | 21,583 |
| Average | 2,398 |
| % of AAC | 0.40% |

Indicator (5.3) 1a.3: Volume of coniferous timber made available for local use.

| Target (5.3) 1a.3.1: | Acceptable variance: |
|---|--|
| 10,000 m ³ of the coniferous AAC is made available | Not to exceed the total annual allocation |
| annually for Community Timber Use (CTU) program. | of 10,000 m ³ in any given timber season. |

Status: Meets

In accordance with Section 8(2)(e) of the FMA (Canfor, 1999), the Minister reserves the right to issue coniferous timber dispositions to provide up to 10,000 m³ available for a Community Timber Use (CTU) Program. The 2004 harvest season was the first year that the ASRD requested that the 10,000 m³ volume be made available. The proposed volumes for the CTU program are included in Canfor's annual operating plan submitted annually.

Since 2004, the coniferous volumes in Table 37 have been made available to the local sawmillers or loggers through the CTU program.

| Operational Unit | 2004 (m ³) | 2005 (m ³) | 2006(m ³) | 2007(m ³) |
|------------------|------------------------|------------------------|-----------------------|-----------------------|
| Economy | 9,819 | | | |
| Latornell | | 8,536 | 8,290 | |
| Smoky | | | | 9,746 |

Table 37. Local Use Timber Volume Allocation by Timber Year

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

Society's responsibility for sustainable forest management requires that fair, effective forest management decisions are made.

Critical Element (6.1): Aboriginal and Treaty Rights

Recognize and respect Aboriginal and treaty rights.

Value (6.1) 1: Understand and respect Aboriginal and treaty rights.
Objective (6.1) 1a: Infringement of Aboriginal and treaty rights will be avoided.
Indicator (6.1) 1a.1: Percent conformance to SFM elements pertinent to the protection of aboriginal and treaty rights.

Target (6.1) 1a.1.1: 100% conformance to SFMP targets of Element (1.2) Species Diversity and Element (3.2) Water Quality and Quantity annually. Acceptable variance: 80% conformance to the acceptable variances of SFMP targets related to species diversity, and water quality and quantity.

Status: Does not meet

Elements (1.2) and (3.2) include 12 targets related to the management of species diversity, water quality and water quantity. Maintenance and protection of those resources provides defacto protection for aboriginal and treaty rights. Two of the 12 related targets are not at a scheduled reporting time. Seven out of the 10 reported targets (70%) were met in 2007. Following is a summation of results:

- Critical Element (1.2) Species Diversity:
 - Target (1.2) 1a.1.1: Maintenance of habitat suitability rating
 - Results: Not a scheduled reporting time
 - Target (1.2) 1a.1.2: Management of ECA in bull trout watersheds
 - Results: Meets
 - Target (1.2) 1a.1.3: Management of forest seral condition in the Caribou Area and maintenance of buffers adjacent to trumpeter swan lakes
 - Results: *Not a scheduled reporting time (caribou) and meets (trumpeter swans)
 - Target (1.2) 1a.1.4: Rare plant identification training for Canfor staff
 - Results: Meets
 - Target (1.2) 1a.1.5: Participation in biodiversity monitoring program(s)
 - Results: Meets
 - Target (1.2) 1a.1.6: Retention of coarse woody debris
 - Results: Not scheduled reporting time
 - Target (1.2) 1a.1.7: Establishment of planned watercourse buffers
 - Meets
 - Target (1.2) 1a.1.8: Management of structure retention
 - Results: Does not meet

- <u>Critical Element (3.2) Water Quality and Quantity</u>
 - Target (3.2) 1a.1.1: Management of Water Quality Concern Rating on stream crossings
 - Results: Does not meet
 - Target (3.2) 1a.2.1: Remedial action for stream crossings
 - Results: Does not meet
 - Target (3.2) 1a.3.1: Compliance with riparian zones standards
 - Results: Meets
 - Target (3.2) 2a.1.1: Conformance to water yield increase limits
 - Results: Meets

Note: Because this is a 2-component target, for the summary of performance tables (found in the Executive Summary and Section 9-Summary) and the reporting in Target (6.1) 1a.1.1, this target has been reported as Meets.

pect for Aboriginal Forest Values, Knowledge,

and Uses

Respect traditional Aboriginal forest values and uses identified through the Aboriginal consultation process.

Value (6.2) 1: Understand and respect treaty and Aboriginal special needs.

Objective (6.2) 1a: Early and effective consultation with Aboriginal peoples will be provided. **Indicator (6.2) 1a.1:** Number of opportunities for early and effective consultation with Aboriginal peoples.

| Target (6.2) 1a.1.1: | Acceptable variance: |
|--|--|
| To annually provide a range of opportunities | Opportunity for meaningful consultation on General |
| for early and effective consultation with | Development plans must be provided to members |
| Aboriginal peoples who have indicated interest | of the Sturgeon Lake Cree Nation, Zone 6 Métis |
| in activities on the FMA area. | Nation of Alberta and the Aseniwuche Winewak |
| | Nation of Canada annually. |

Status: Meets

Consultation with Aboriginal communities regarding Canfor's activities on the DFA are carried out in conformance with the recently approved *Alberta First Nations Consultation Guidelines on Land Management and Resource Development* (GOA, 2006). Implementation of the guidelines has resulted in identification of the Horse Lake First Nation as having interests within Canfor's FMA operating area. Meanwhile, Canfor maintained contact through its consultation processes with Sturgeon Lake Cree Nation (SLCN) the Aseniwuche Winewak Nation of Canada (AWN) and Zone 6 Métis Nation of Alberta.

In 2007, Canfor participated in the following consultation activities with First Nations:

Horse Lake First Nation

• The Horse Lake First Nation advised Canfor in early 2007 that Canfor's developments may be within their Traditional Territory and provided Canfor with a copy of the *Horse Lake First Nation Consultation Policy*;

- Canfor requested a meeting with an appointed Horse Lake representative and subsequently met in September to initiate and refine a mutually acceptable consultation process; and
- The parties have agreed to commence consultation on proposed future activities early in 2008.

Sturgeon Lake Cree Nation (SLFN)

- SLCN continues provide a representative on Canfor's forest management advisory committee;
- A community meeting was held on Jan 17th to provide an opportunity for community members to review Canfor's General Development Plan (GDP) and Mountain Pine Beetle strategy; and
- Discussions will continue in 2008 with SLCN representatives to develop an effective consultation process.

Aseniwuche Winewak Nation (AWS)

- AOP maps sent to AWN for consultation review on April 25th. Response received May 14th;
- Meeting held Oct 1st, 2007 to discuss progress with MOU. Change in direction. Will reconvene discussions in spring of 2008;
- Canfor and AWN agreed on a consultation process and implemented it in the 2007 AOP; and
- Discussion between Canfor and AWN on a Memorandum of Understanding will continue in 2008.

Zone 6 Métis Nation of Alberta

• Zone 6 Métis Nation of Alberta continues provide a representative on Canfor's forest management advisory committee.

All meetings and actions related to First Nations consultation are documented in an internal database (COPI – Creating Opportunities For Public Input) and reports can be generated to demonstrate communication efforts for each First Nation community.

Objective (6.2) 1b: Special cultural and historic sites will be respected. **Indicator (6.2) 1b.1:** Percentage of historic resources that are protected.

| Target (6.2) 1b.1.1: | Acceptable variance: |
|---|---|
| 100% conformance to the prescription for historical resources | Zero. |
| prepared by a certified archaeologist annually. | and the second secon |

Status: Meets

In the 2007, there were 8 sites of historical significance identified through field pre-impact assessments conducted by an independent certified archaeologist. All these sites were delineated from the harvest areas and avoided during operations as prescribed by the archaeologist. Eight sites of historical significance were identified during field post-impact assessments, which did not affect operations.

Indicator (6.2) 1b.2: Percentage of known local historical resources that are respected.

| Target (6.2) 1b.2.1: | Acceptable variance: |
|--|----------------------|
| 100% of known local historical resources are respected annually. | Zero. |

Status: Meets

Known local historical resources are identified through use of the *Heritage Potential Model* that received approval from Alberta Community Development in 2002. This model is based on government supplied data and was updated in the fall of 2006. All 2007 planned harvest areas were screened against the model by a certified archaeologist to ensure that no harvest operations were planned within the immediate vicinity of known local historical resources. According to the most recent model data,

there are 70 registered archaeological sites within the FMA. In 2007, 100% of these sites were avoided.

Critical Element (6.3): Public Participation

Demonstrate that the public participation process is designed and functioning to the satisfaction of the participants.

Value (6.3) 1: Inclusive public process.

Objective (6.3) 1a: Affected and locally interested parties will be involved in the development of the decision-making process through an open, transparent and accountable process. **Indicator (6.3) 1a.1:** Percentage conformance to the Forest Management Advisory Committee's Terms of Reference (FMAC, 2007).

| Target (6.3) 1a.1.1: | Acceptable variance: |
|---|----------------------|
| 100% conformance to the FMAC's Terms of Reference (TOR) annually. | Zero. |

Status: Meets

FMAC activities were in accordance with the terms of reference (TOR) in 2007. The TOR was reviewed and ratified at the January 17th, 2007 meeting.

Indicator (6.3) 1a.2: Number of opportunities for public participation.

| Target (6.3) 1a.2.1: | Acceptable variance: |
|---|----------------------|
| To provide a minimum of 4 types of opportunities for public | Zero |
| participation annually. | |

Status: Meets

Canfor offered the following opportunities for public involvement during 2007:

- 1. An active FMAC advisory group;
- 2. Open house January 18th with Sturgeon Lake First Nations;
- 3. Open house for review of GDP and AOP November 27th in Grande Prairie;
- 4. Sponsored open houses for review of Vegetation Management Plan in Valleyview March 22nd and Grande Cache March 20th;
- 5. Annual trapper consultation and notification regarding harvesting and silviculture plans;
- 6. Annual outfitter notification regarding harvest and silviculture plans; and
- 7. Responses to letters and telephone calls to Canfor from the public.

In addition, the SFMP, Annual Performance Monitoring Report, 5-year GDP/AOP and DFMP are made available for the public in a variety of locations (at the Grande Prairie Woodlands Office, local libraries, open houses, trade shows, and on **www.canfor.com**).

Indicator (6.3) 1a.3: Percentage of public inquiries that receive an initial contact.

| Target (6.3) 1a.3.1: | Acceptable variance: |
|---|---|
| To make initial contact to 100% of public inquiries | To make initial contact with a minimum of |
| within one month of receipt. | 90% of the public inquiries within one month. |

Status: Meets

There were 10 public inquiries in 2007 (Table 38), and responses to all were completed within one month. All contact was made either by telephone or in person.

| ID | Date of Inquiry | Method of Inquiry | Date of Initial Contact | Initial Contact Within 1 Month |
|------------------|--------------------|----------------------|----------------------------|-----------------------------------|
| ITS-GP2007-0001 | January 13, 2007 | Telephone | January 13, 2007 | Yes |
| ITS-GP2007-0006 | February 14, 2007 | Telephone | February 14, 2007 | Yes |
| ITS-GP-2007-0007 | February 19, 2007 | Telephone | February 19, 2007 | Yes |
| ITS-GP-2007-0012 | March 20, 2007 | In person | March 20, 2007 | Yes |
| ITS-GP-2007-0013 | March 22, 2007 | In person | March 22, 2007 | Yes |
| ITS-GP-2007-0015 | April 23, 2007 | In person | April 23, 2007 | Yes |
| ITS-GP-2007-0016 | May 2, 2007 | In person | May 2, 2007 | Yes |
| ITS-GP-2007-0027 | August 2, 2007 | Telephone | August 2, 2007 | Yes |
| ITS-GP-2007-0036 | September 12, 2007 | In person | September 12, 2007 | Yes |
| ITS-GP-2007-0014 | November 28, 2007 | Telephone | November 28, 2007 | Yes |

| Table 38 | Res | oonse f | to Pu | ıblic | Inquiries |
|----------|-------|---------|-------|-------|-----------|
| | 11000 | | | | inguinos |

Critical Element (6.4): Information for Decision-Making

Provide relevant information to interested parties to support their involvement in the public participation process, and increase knowledge of ecosystem processes and human interactions with forest ecosystems.

Value (6.4) 1: Current scientific, local, and traditional knowledge.

Objective (6.4) 1a: Forest management decisions will be based on scientific, local, and traditional knowledge.

Indicator (6.4) 1a.1: Number of opportunities to enhance scientific, local, and traditional knowledge.

| Target (6.4) 1a.1.1: | Acceptable variance: |
|--|----------------------|
| To provide a minimum of 8 different opportunities to enhance | Zero. |
| knowledge annually. | |

Status: Meets

In 2007, Canfor provided the following opportunities to enhance knowledge:

- 1. Through the availability of the 2006 *Annual Performance Monitoring Report* to the FMAC and general public for review at local libraries, on **www.canfor.com**, and for pickup or viewing at the Canfor office;
- 2. Through the availability of the approved 2006/07, 5-year General Development Plan/Annual Operating Plan for review by the general public at open house(s), at local libraries or viewing at the Canfor office;
- 3. Through the availability of the approved DFMP to review by the general public at local libraries, on **www.canfor.com** or viewing at the Canfor office;
- 4. By providing financial and technical support for the Grande Prairie and Area Forest Educator;
 - In the 2006/07 season (July 1st, 2006 to June 30th, 2007) the forest educator spoke to 3,839 students, and 153 classes.
- 5. By supporting "Envirothon" for high school students who learn about forestry, soil, water, energy sector activities and wildlife;

- 6. Through sponsorship and volunteering for Alberta Forestry Week "Walk Thru the Forest", where students learn about various forestry topics;
- 7. Through sponsorship and volunteering for Alberta Forestry Week "Arbor Day" where grade one students learn about the importance of trees;
- 8. Through participation in the 2007 Forestry Show;
- 9. By sponsorship of open houses (see (6.3) 1a.2.1 for details); and
- 10. Through sponsorship of presentations at FMAC meetings by Ducks Unlimited (Wetland Ecosystems) and Dwight Weeks with Canfor (DFMP amendment required due to Mountain Pine Beetle outbreak).

Indicator (6.4) 1a.2: Number of active research projects.

| Target (6.4) 1a.2.1: | Acceptable variance: |
|--|----------------------|
| To be involved in a minimum of 10 active research projects annually. | Zero |

Status: Meets

Research plays an essential role in the successful implementation of sustainable forest management. Research also provides important information used in decision-making regarding the management of forestry operations (i.e. timber harvesting, road construction and maintenance, silviculture, etc.) and forest products manufacturing.

Canfor is involved in research in a variety of ways. Each year, Canfor allocates significant resources to support forest research, forestry education, and projects that enhance the general publics' forestry knowledge. The company also maintains representation on several associations, committees or groups that initiate or support research.

Table 39 indicates that in 2007, Canfor Grande Prairie operations participated in the following research projects. Funding levels indicated are for the duration of the project, up to December 31, 2007.

| Canfor Research Projects | | |
|--------------------------|--|-----------------|
| Project Identifier | Project Name Funding (\$) | |
| CANFOR-01-036 | WESBOGY | \$453,236 |
| CANFOR-01-040 | Foothills Growth & Yield Association | \$224,956 |
| CANFOR-01-047 | Sustainable Forest Management Network | \$165,063 |
| CANFOR-01-064 | Competition Modeling | \$625,362 |
| CANFOR-01-066 | EMEND Phases 9 - 13 | \$1,050,000 |
| CANFOR-01-070 | Grizzly Bear Health Project | <u>\$70,916</u> |
| | subtotal | \$2,589,532.63 |
| | Partner Research Projects | |
| BOUBRO 01-04 | 01-04 Boreal Forest Research Centre \$80,000 | |
| FOOMOD 01-04 | Caribou Landscape Management Association | \$76,500 |
| FOOMOD 01-5 | Caribou Adaptive Management Plan | <u>\$70,900</u> |
| HWWOOD 091-129 | GYPSY | \$183,000 |
| WEYDV 01-178 | Site Index Project | \$345,000 |
| MDFP 01-34 | White Spruce Physiology | \$50,000 |
| OF 02-16 | Enhanced Management Lodgepole Pine | \$3,600 |
| | subtotal | \$809,000.00 |
| | Grand Total | \$3,398,532.63 |

Table 39. Research Projects

9. Summary

The status of the 60 targets found throughout this *Annual Performance Monitoring Report* is summarized in Table 40 below.

| Classification | 2006 | 2007 |
|---|------|------|
| Number of targets completed | 0 | 0 |
| Number of targets met | 36 | 38 |
| Number of targets not met | 12 | 12 |
| Number of targets in progress | 3 | 0 |
| Number of targets not due for reporting | 9 | 10 |
| Total number of CSA Z809-02 targets | 60 | 60 |

| Table 40. | Summary | of Performance |
|-----------|---------|----------------|
|-----------|---------|----------------|

Canfor's performance is assessed annually through internal and external audits. During audits, 3 types of findings are possible:

Non-compliance: A contravention of a legal requirement. These can be either major or minor non-conformances depending on severity.

<u>Non-conformance</u>: A contravention of the Company's FMS requirements including policy or procedures. A requirement has not been fulfilled in practice, where the requirement could be a Canfor FMS document; or the ISO 14001, CSA-Z809 or PEFC Chain of Custody standards. These can be either major or minor non-conformances depending on severity.

Opportunities for Improvement: A suggestion made for improving a practice or a procedure. Suggestions for improvement are not non-conformances.

In 2007, Grande Prairie division were audited twice, with the following results:

- Sept 11th to 14th Canfor internal audit of CSA Z809-02 (including PEFC Chain of Custody) for Grande Prairie FMA Area and ISO 14001:2004 for Grande Prairie FMA area and Hines Creek Quota areas:
 - 7 good practices;
 - 5 minor non-conformances; and
 - 30 opportunities for improvement/recommendations.
- October 22nd to 26th, 2007 independent third party surveillance audit of CSA Z809-02 (including PEFC Chain of Custody) for Grande Prairie FMA Area and ISO 14001:2004 for Grande Prairie FMA area and Hines Creek Quota areas:
 - 3 good practices;
 - 2 minor non-conformances; and
 - 4 opportunities for improvement.

Note: audit results include findings under the ISO14001, which may be applicable to the Hines Creek quota areas and may not be related to SFM and/or the Grande Prairie FMA area.

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

In addition to the audit process, any non-compliance and non-conformance incidents detected by Canfor during inspections of operations are recorded in the Incident tracking system (ITS) and are addressed through corrective action plans as a means to continually improve performance.

10. Literature Cited

- Andison, D.W. 1997. Landscape Fire Behaviour Patterns in the Foothills Model Forest. Bandaloop Ecosystems Services.
- (AFPA) Alberta Forest Products Association/Land & Forest Service. 1999. Forest Soils Conservation. Task Force Report, 1996. Edmonton, Alberta.
- (ASRD) Alberta Sustainable Resource Development. 2007. Alberta Regeneration Survey Manual Effective May 1, 2007. Edmonton, Alberta.
- (ASRD) Alberta Sustainable Resource Development. 2005. Canfor FMA 900037 Operating Ground Rules. Edmonton, Alberta.
- (ASRD) Alberta Sustainable Resource Development. 2006. Mountain Pine Beetle Action Plan, Edmonton, Alberta.
- (ASRD) Alberta Sustainable Resource Development. 2005. Standards for Tree Improvement in Alberta. Publication Number: Ref. T/0378. Alberta Sustainable Resource Development, Fish and Wildlife Division, Edmonton, Alberta. 48 pp.
- (ASRD) Alberta Sustainable Resource Development. 1973. Timber Management Regulation. Edmonton, Alberta.
- (AWCRT) Alberta Woodland Recovery Team. 2005. Alberta Woodland Caribou Recovery Plan 2004/ 05 - 2013/ 14. Alberta Woodland Caribou Recovery Team. 57 pp.
- Beaudry, P & Associates. 2007. Risks to Fish Habitat Caused by Increases in the Delivery of Fine Sediment at Stream Crossings.
- Canfor (Canadian Forest Products Ltd.). 1999. Forest Management Agreement. O.C. 1998/99. Canfor Grande Prairie Division. Grande Prairie, Alberta.
- Canfor (Canadian Forest Products Ltd.). 2004. Trappers Consultation and Notification Program. Revised March 2004. Canfor Grande Prairie Division. Grande Prairie, Alberta.
- Canfor (Canadian Forest Products Ltd). 2004. Windfall/Non Forested Land Strategy. Revised July 2004. Canfor Grande Prairie Division. Grande Prairie, Alberta.
- CSA (Canadian Standards Association). 2002. Sustainable Forest Management: Requirements and Guidance. Canadian Standards Association, Mississauga, On.
- Delong, S.C. and D. Tanner. 1996. Managing for the pattern of forest harvest: lessons from wildfire. *Biodiversity and Conservation* 5:1191-1205.
- Edenius, L and Sjoberg, K. 1997. Distribution of birds in landscape mosaics of old growth forests in northern Sweden: relations to habitat area and landscape context. Ecography 20: 425-431.
- (FMAC) Forest Management Advisory Committee for CSA Certification. 2007. Terms of Reference Approved January 17, 2007. Debolt, Alberta.
- (GOA) Governement of Alberta. 2006. Alberta First Nations Consultation Guidelines on Land Management and Resource Development. Edmonton, Alberta.
- (ORM) Olympic Resource Management. 2000. Fire Return Intervals in the Canfor FMA: Discussion Paper. Prepared for Canfor Alberta Region, Grande Prairie Division. Grande Prairie, Alberta.
- Roberts, C. and Norment, C. 1999. Effects of patch size and habitat characteristics on the breeding success of Scarlet Tanagers. Auk 116(1): 73-82.

Schumaker, N. H. 1996. Using Landscape Indices to Predict Habitat Connectivity. Ecology 77:1210-1225.

With, K.A. 1999. Is Landscape Connectivity Necessary and Sufficient for Wildlife Management? Forest Fragmentation: Wildlife and Management Implications.



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