Millar Western Forest Products Ltd.

Commitments

2007-2016 Detailed Forest Management Plan

November 15, 2007

Table of Contents

1. INTRODUCTION 1

2. VALUES, OBJECTIVES, INDICATORS AND TARGETS (VOITS) 3

2.1 VOIT Summary Table 7
2.2 VOIT Detailed Description 15
2.2.1 Biological Diversity 17
VOIT 1 – Area of opening, mature + old, old and oldgrowthness forest by species strata for the gross and managed landbase for each FMU (1.1.1.1). 18
VOIT 2 – Opening patch size distribution on the gross landbase for each FMU (1.1.1.2a). 24
VOIT 3 – Percent of overall oldgrowthness forest area that is interior oldgrowthness forest by FMU for the gross landbase (1.1.1.2Bi). 27
VOIT 4 – Open all-weather forestry road density by FMU (1.1.1.3A). 30
VOIT 5 – Open seasonal/temporary forestry road length by FMU (1.1.1.3B). 33
VOIT 6 – Existence of process for maintaining plant communities uncommon in the DFA and/or Province (1.1.1.4). 36
VOIT 7 – Area of unsalvaged burned forest (1.1.1.5A). 39
VOIT 8 – Area of unsalvaged blowdown forest (1.1.1.5B) 42
VOIT 9 – Number of non-conformance incidents with FMA Operating Ground Rules or Alberta government approved Millar Western riparian management strategy (1.1.1.6). 44
VOIT 10 – Volume and area harvested in riparian areas under Alberta government approved Millar Western Riparian Management Strategy (1.1.1.7). 46
VOIT 11 – Percent of FMU AAC residual structure (living and dead), within a harvest area, representative of the status (living/dead), size and species distribution of the overstorey trees by operating compartment (1.1.2.1A). 48
VOIT 12 – Percent of harvested area by FMU, with downed woody debris volume equivalent to pre-harvest conditions (1.1.2.1B). 50
VOIT 13 – Number of non-conformance incidents with FMA OGRs in relation to identified sensitive sites located on the DFA (1.1.2.2). 52
VOIT 14 – Number of non-conformance incidents with Millar Western's OGRs or Code of Practice for Water Course Crossings, by FMU (1.1.2.3). 54
VOIT 15 – Area of suitable habitat within each FMU for each biodiversity assessment species (1.2.1.1). 57
VOIT 16 – Number and area (ha) of in-situ genetic conservation areas (1.3.1.1) 63
VOIT 17 – Number of provenances and genetic lines in ex-situ gene banks and trials (1.3.1.2). 65
VOIT 18 – Stakeholder consultation regarding protected areas as identified through government processes (1.4.1.1). 67
2.2.2 Ecosystem Productivity 69

VOIT 19 – Annual percent of satisfactory regenerated surveys (establishment surveys and performance surveys) by company and FMU (2.1.1.1A). 70
VOIT 20 – Cumulative percent of satisfactory regenerated surveys (establishment surveys and performance surveys) by company and FMU (2.1.1.1B). 73
VOIT 21 – Forestry Operator specific regenerated strata distribution percentage by subunit (2.1.1.1C). 76
VOIT 22 – Percent of change in managed landbase area (2.1.2.1). 80
VOIT 23 – Area affected by insects, disease or natural calamities as reported by the Alberta government and Millar Western (2.1.2.2)..... 82
VOIT 24 – Percent of Rank 1 and Rank 2 mountain pine beetle susceptible stand area harvested (2.1.2.3A)..... 84
VOIT 25 – Percent of identified MPB infested stand area harvested (2.1.2.3B). 87
VOIT 26 – Area of pure pine and mixedwood pine stands by 'mature' and 'old' seral stage (2.1.2.4)..... 89
VOIT 27 – Existence and implementation of a noxious weed program (2.1.3.1). 92
VOIT 28 – Existence of programs to select and monitor amphibian and soil micro-organism indicator species (2.2.1.1). 94
2.2.3 Soil and Water Quality 97
VOIT 29 – Number of incidents of non-conformance with respect to bared area (roads and landings) within harvest areas (3.1.1.1). 98
VOIT 30 – Number of incidents of non-conformance with respect to reportable soil erosion and slumping (3.1.1.2). 101
VOIT 31 – Number of incidents of non-conformance with respect to rutting in harvest areas (3.1.1.3)..... 104
VOIT 32 – Percent of eligible third order watersheds in which the annual average runoff coefficient value is > 15% of the baseline condition (3.2.1.1A)..... 107
VOIT 33 – Percent of eligible first order watersheds in which the annual average runoff coefficient value is > 50 % of the baseline condition (3.2.1.1B)..... 110
VOIT 34 – Existence of research initiative to develop relationship between operations and water quality, and implementation of recommendations to mitigate negative impact on water quality (3.2.1.2). 113
VOIT 35 – Riparian buffers maintained as outlined in FMA Operating Ground Rules or Alberta government approved riparian management strategy (3.2.2.1). 115
2.2.4 Global Ecological Cycles 117
VOIT 36 – Existence of carbon budget analysis on the Preferred Forest Management Scenario of the 2007 DFMP (4.1.1.1)..... 118
VOIT 37 – (4.2). 120
2.2.5 Multiple Benefits to Society 121
VOIT 38 – Compliance with Annex 1 of the Alberta Forest Management Planning Standard (April 2006), regarding the process for establishing appropriate AACs (5.1.1.1)..... 122
VOIT 39 – Adherence to communication initiatives related to non-timber commercial rights holders, as defined in the external communications section of the DFMP/SFMP Communication Implementation Plan. (5.1.2.1). 124
VOIT 40 – Number of non-conformance incidents as per The Heritage Resources Act. (5.1.2.2)..... 127

VOIT 41 – Development and implementation of process for identifying areas of high aesthetic value and mitigating visual impacts of harvest operations (5.1.2.3). 130
VOIT 42 – Percent of Whitecourt FireSmart Community Zone area in the 'extreme' and 'high' Fire Behaviour Potential rating categories (5.2.1.1A). 132
VOIT 43 – Percent of DFA area in the 'extreme' and 'high' Fire Behaviour Potential rating categories (5.2.1.1B). 135
VOIT 44 – Adherence to communication initiatives related to integrating other uses and timber management activities, as defined in the external communications section of the DFMP Communication Implementation Plan (5.2.2.1). .. 138
VOIT 45 – Difference between managed and natural stand yield (5.2.3.1). 141
2.2.6 Accepting Society's Responsibility for Sustainable Development 145
VOIT 46 – Meet the Alberta government's current expectations for aboriginal consultation (6.1.1.1). 146
VOIT 47 – Contract opportunities provided to the Alexis Nakota Sioux Nation (i.e. logging and silviculture) (6.1.2.1) 149
VOIT 48 – Number of Environmental Co-Stewardship Committee (ECSC) meetings (6.1.3.1). 151
VOIT 49 – Meet expectations of Section 5 of CSA Z809-2002 – Public Participation Requirements (6.2.1.1) 153
VOIT 50 – Contribution to, and implementation of, a management plan for Huestis Forest (6.2.2.1). 156
VOIT 51 – Development and incorporation of Virtual Open House into corporate website (6.3.1.1). 159
VOIT 52 – Establishment of permanent Public Advisory Committee (PAC) and number of group meetings (6.3.2.1). 161
VOIT 53 – Implementation of a 24-hour toll-free telephone hotline (6.3.3.1) 163

3. COMPANY COMMITMENTS 165

3.1 Company Commitment Summary Table 167
3.2 Company Commitment Detailed Description 171
3.2.1 Forest Management Planning 172
Company Commitment 1 – Reconcile SHS, following DFMP approval. 173
Company Commitment 2 – Re-run BAP analysis on SHS submitted with 2007 DFMP. 174
Company Commitment 3 – Maintain DFA Harvest Planning Committee 175
Company Commitment 4 – Develop and implement Industrial Salvage tracking process. 177
3.2.2 Forest Operations 178
Company Commitment 5 – Revise FMA Operating Ground Rules. 179
3.2.3 Silviculture 180
Company Commitment 6 – Maintain DFA Silviculture Committee. 181
Company Commitment 7 – Develop Alternative Regeneration Standards (ARS). 183
Company Commitment 8 – Develop specific regeneration strategies to mitigate insect and disease infestations. 184
3.2.4 Growth and Yield 186

Company Commitment 9 – Develop and secure the Alberta government's approval of a wider-suite of managed stand yield curves. 187
Company Commitment 10 – Implement growth and yield initiatives. 188
3.2.5 Research *190*
Company Commitment 11 – Investigate new technologies for developing forest and vegetation inventory for DFA. 191
Company Commitment 12 – Develop and implement operational risk rating system to provide guidance in determining environmental conditions in which forest operations can be conducted in an environmentally sound manner. 192
Company Commitment 13 – Investigate the need for BAP SHEs and HSMs validation and refinement. 193

4. SUPPLEMENTAL INFORMATION 195

4.1 Seral Stages 195
4.2 Oldgrowthness 197
4.3 Interior Oldgrowthness 198
4.4 Cutover Update Process 199
4.4.1 Background *199*
4.4.2 Approach *199*
4.5 Structure Retention Strategy 200
4.6 Heritage Resource Review Process: 203
4.6.1 Background *203*
4.6.2 Approach *203*

5. REFERENCES 205

List of Tables

Table 1. VOIT Summary Table. 8
Table 2. Current (2007) W11 gross landbase seral stage species strata area and area proportions. 19
Table 3. Current (2007) W11 managed landbase seral stage species strata area and area proportions. 19
Table 4. Current (2007) W13 gross landbase seral stage species strata area and area proportions. 19
Table 5. Current (2007) W13 managed landbase seral stage species strata area and area proportions. 20
Table 6. Target (2017) W11 gross landbase seral stage species strata maximum and minimum areas. 20
Table 7. Target (2017) W11 managed landbase seral stage species strata maximum and minimum areas. 21
Table 8. Target (2017) W13 gross landbase seral stage species strata maximum and minimum areas. 21
Table 9. Target (2017) W13 managed landbase seral stage species strata maximum and minimum areas. 22
Table 10. Current (2007) area, and proportion of total opening patch area, by defined opening patch size classes for the gross landbase by FMU 24
Table 11. Target (2017) area, and proportion of total opening patch area, by defined opening patch size classes for the gross landbase by FMU 25
Table 12. Current (2007) oldgrowthness area and area of interior oldgrowthness forest by FMU on the gross landbase. 27
Table 13. Target (2017) oldgrowthness area and area of interior oldgrowthness forest by FMU on the gross landbase. 28

Table 14. Current area of suitable habitat by species by HSM on the W11 gross FMU area. 58
Table 15. Current area of suitable habitat by species by HSM on the W13 gross FMU area. 58
Table 16. Target area of suitable habitat by species by HSM on the W11 gross FMU area. 59
Table 17. Target area of suitable habitat by species by HSM on the W13 gross FMU area 60
Table 18. Millar Westerns 2005 Timber Year regeneration survey results for FMU W13. 70
Table 19. Millar Western cumulative (1997-2005) establishment survey results for FMU W13. 73
Table 20. W11 target (2017) regenerated strata area and proportion by forestry operator. 77
Table 21. W13 target (2017) regenerated strata area and proportion by forestry operator. 77
Table 22. Current (2007) area and proportion of managed landbase within the Rank 1 and Rank 2 MPB rating classes 84
Table 23. Current (2007) area of pure and mixedwood pine stands in mature and old seral stages on the managed landbase. 89
Table 24. Target (2017) area of pure and mixedwood pine stands in mature and old seral stages on the managed landbase. 90
Table 25. Forecasted third order watersheds with RC values > 15 % above the baseline condition. 107
Table 26. Forecasted (2007) percent of eligible first order watersheds with RC values > 50 % above the baseline condition. 110
Table 27. 2005 Timber Year non-conformances related to Heritage Resources Act. 127
Table 28. Current (2007) fire behaviour potential area classifications for the Whitecourt FireSmart Community Zone. 132
Table 29. Target (2017) fire behaviour potential area classifications for the Whitecourt FireSmart Community Zone. 133
Table 30. Current (2007) fire behaviour potential area classifications for the DFA. 135
Table 31. Target (2017) fire behaviour potential area classifications for the Whitecourt FireSmart Community Zone. 136
Table 32. W11 Managed Landbase natural and managed stand maximum MAIs. 141
Table 33. W13 Managed Landbase natural and managed stand maximum MAIs. 142
Table 34. Company Commitment Summary Table. 168
Table 35. Summary of commitments within the Growth and Yield Plan. 188
Table 36. Broad cover group, species strata and BAP strata seral stage classification. 196
Table 37. Strata description and applicability to the gross and managed landbase of the DFA. 197

List of Figures

Figure 1. Location of Huestis Demonstration Forest. 157
Figure 2. Natural stand origin oldgrowthness proportion over time. 198

1. Introduction

This document contains all the standards and initiatives that the Company will be aiming to achieve within the 10-year DFMP term. There are two type of commitments contained within this document. The first are Values, Indicators, Objectives and Targets (VOITs), which are generally mandated by the Alberta government through the Alberta Forest Management Planning Standard (Alberta, 2006) (Planning Standard), required under the Canadian Standards Association (CSA) Z809-02 standard, or as requested by the 2007 DFMP Public Participation Group (PPG). As described in *Chapter 3 – Plan Development*, these VOITs have been thoroughly reviewed by the plan development team, and are consistent with both the Company's objectives and those identified by the other stakeholders. The second are Company Commitments, which are developed by Millar Western independently.

Each of the two types of commitments (VOITs and Company Commitments), are divided into their own section containing, first, a summary table of all the respective commitments, then, a detailed description of each commitment. Within the summary tables and the detailed descriptions, the commitments are logically arranged according to their Canadian Council of Forest Minister's (CCFM) Criterion in the case of VOITs (i.e. Biological diversity, Ecosystem productivity, Soil and water, etc.) and their fit within Millar Western's Woodland's functional groups (Forest management planning, Forest operations, Silviculture, etc.) in the case of Company Commitments.

As some of the commitments, or elements thereof, require a reasonable level of explanation (in particular, VOITs that are based on outcomes from forecasting exercises), this document contains a Supplemental Information section. This section contains information on concepts, approaches and strategies that will enable the reader to more clearly understand the commitment(s) to which it relates, without having to refer to the other documents outside of the DFMP.

In addition to the defining the commitments, the Planning Standard identifies items that must be reported within the 2007 DFMP for specific VOITs. The VOIT Reporting section of this document contains each of these.

2. Values, Objectives, Indicators and Targets (VOITs)

Values, Objectives, Indicators and Targets (VOITs) are performance requirements that address the Canadian Standards Association's (CSA) Z809-02 standard (Sustainable Forest Management (SFM)). This CSA standard outlines the requirements for implementing a public participation system, the performance requirements for a defined forest area (DFA) and the auditing process for determining whether the SFM requirements are implemented at the DFA level (CSA 2002). As Millar Western has achieved registration under this standard, the Company has assembled the 2007 DFMP around the requirements for adhering to this standard in the future.

The VOITs contained within this section are consistent with the Canadian Council of Forest Minister's (CCFM) SFM Criteria and the associated CSA SFM Elements. The CCFM SFM Criteria include (the bold text below each criterion is the altered title used within the Planning Standard and this document):

- Conservation of biological diversity (Criterion 1)
    - **Biological Diversity**
- Maintenance and enhancement of forest ecosystem condition and productivity (Criterion 2)
    - **Ecosystem Productivity**
- Conservation of soil and water resources (Criterion 3)
    - **Soil and Water**

- Forest ecosystem contributions to global ecological cycles (Criterion 4)
    - **Global Ecological Cycles**
- Multiple benefits to society (Criterion 5)
    - **Multiple Benefits to Society**
- Accepting society's responsibility for sustainable development (Criterion 6)
    - **Accepting society's responsibility for sustainable development**

In accordance with CSA Z809-02, the VOITs described in this section have been through the public participation process, which utilized the formal 2007 DFMP Public Participation Group. This group submitted a report to Millar Western following the completion of their involvement, including, but not limited to, the group's participation, meeting attendance, meeting topics, items addressed, VOIT review and input and recommendations for improvement in the area of public participation (*Appendix IV – Public Participation Group Report*).

Each VOIT is intended to be read independently, with the exception of those that reference the Supplemental Section within this document. For this reason, along with the fact that several of the SFM requirements overlap one and other, there is a significant amount of repetition among the VOITs.

Section **Error! Reference source not found.** – VOIT Summary Table, consists of a table (Table 1) that simplifies the key points of the VOIT. It is intended to be used to aid in navigating through the VOITs. Section 2.2 – Detailed VOIT Summary, contains the detailed summary for each VOIT, consisting of all the headings as described below:

Within the following VOIT sections the VOITs are organized according to their association with their respective CCFM SFM Criteria and the CSA SFM Elements. For reference, the CCFM Criteria, CSA SFM Element, Value and Objective for each VOIT are stated. Each VOIT is identified according its VOIT ID, assigned to the Indicator; this identifier is simply a value between 1 and 53. For consistency between the VOIT documentation in the 2007 DFMP and the Planning Standard, each VOIT also carries the hierarchical numbering scheme found in the Planning Standard. This numbering scheme aligns with the CCFM SFM Criteria, CSA SFM Elements, Values and Objectives.

The following headings are addressed for each VOIT, with the following purpose:

Rationale

- Provides a justification for undertaking the initiative that will meet the objective that is supported by the indicator and target.

Current Status

- Summarizes the current status of the indicator. In many cases, it simply states the status of the previous reporting year (in this case the 2005 timber year – May 1, 2005 – April 30, 2006).

Target

- Identifies the target level of the indicator that the Company is aiming to achieve.

Target Supporting Information

- Provides information that is relevant to defining specific elements of the indicators and/or targets and/or how they were derived.

Means of Achieving Target

- Summarizes the processes (existing or proposed) that will be used to achieve the target.

Target Monitoring

- Summarizes the processes (existing or proposed) that will be used to monitor/track the target.

Reporting

- Identifies what will be reported for each target and when it will be reported (i.e. in one or more of the following: annual report, annual operating plan, stewardship report, DFMP).

Acceptable Variance

- Defines the acceptable level that the actual value can differ from that defined in the target at the stated assessment timing.

Response

- Identifies the actions that the Company will undertake when actual values are not within the range of the acceptable variance for each target of each VOIT.

Legal/Policy Requirement

- Defines the legal or policy document that is associated with the VOIT.

Operational and Strategic Plan Linkages

Identifies how each VOIT fits into the various phases of the operation and strategic planning processes, and establishes the planning process where the implementation of each VOIT occurs.

2.1 VOIT Summary Table

Table 1 provides a summary of Millar Western's 2007 DFMP VOITs. This table is only provided as a reference, as each VOIT is more thoroughly described in Section 2.2.

Table 1. VOIT Summary Table.

ID	CSA SFM Element	Value	Objective	Indicator	DFMP Target	Reporting	Acceptable Variance	Response
CCFM Criterion: 1. Biological Diversity								
1	1.1. Ecosystem Diversity.	1.1.1. Landscape Scale Biodiversity.	1.1.1.1. Maintain biodiversity by retaining the full range of cover types and seral stages.	Area of opening, mature + old, old and oldgrowthness forest by species strata for the gross and managed landbase for each FMU (1.1.1.1).	At the start of the 2017 Timber Year, achieve the seral stage class species strata proportions as defined in the target tables.	Stewardship Report: - Actual area and proportion within each seral stage class and species strata; - Variance between actual and target values. DFMP: - Forecasted area and proportion within each seral stage class and species strata at years 0, 10, 50, 100 and 200 for FMUs' gross and managed landbases; - DFA maps of seral stage classes at years 0, 10 and 50 for FMUs' gross and managed landbases.	Opening seral stage class: - Less than 110% of target. Mature + old, old or oldgrowthness seral stage class: - Between 90 - 110% of target.	Adjust strategies in subsequent FMPs.
2			1.1.1.2. Maintain biodiversity by avoiding landscape fragmentation.	Opening patch size distribution on the gross landbase for each FMU (1.1.1.2a).	At the start of the 2017 Timber Year, achieve the opening patch size distribution targets defined in target table.	Annual Report: - Actual harvest size statistics. Stewardship Report: - Actual opening patch area and proportion by size class; - Variance between actual and target values. DFMP: - Forecasted opening patch area and proportion by size class at years 0, 10 and 50 for FMUs' gross landbases; - DFA maps showing the distribution of opening patch polygons by size class at years 0, 10 and 50 for FMUs' gross landbases.	+/- 10% opening patch area, or progress to achieving the 200-year planning horizon target is demonstrated.	Adjust strategies in subsequent FMPs.
3				Percent of overall oldgrowthness forest area that is interior oldgrowthness forest by FMU for the gross landbase (1.1.1.2Bi).	At the start of the 2017 Timber Year, achieve the target proportions of oldgrowthness forest that is interior oldgrowthness forest within the gross landbase for each FMU as defined in target tables.	Stewardship Report: - Actual proportion of interior oldgrowthness for FMUs' gross landbases; - Variance between actual and target values. DFMP: - Forecasted proportion interior oldgrowthness at years 0, 10 and 50; - DFA maps showing distribution of interior oldgrowthness polygons at years 0, 10 and 50.	Not < 80% of the target values for each FMU.	Adjust strategies in subsequent FMPs.
4			1.1.1.3. Maintain biodiversity by minimizing access.	Open all-weather forestry road density by FMU (1.1.1.3A).	At the start of the 2017 Timber Year, the target open all-weather forestry road densities within the DFA, by FMU, are: - W11 - < 0.240 km/km^2 - W13 - < 0.334 km/km^2	Stewardship Report: - Actual density of open all-weather forestry roads by FMU; - Variance between actual and target forestry road values; - Actual density of other users' open all-weather roads by FMU (SRD to supply data).	< 20 % in excess of the target within each FMU.	Adjust strategies in subsequent FMPs.
5				Open seasonal / temporary forestry road length by FMU (1.1.1.3B).	At the end of each Timber Year (beginning 2007), the target open seasonal/temporary road lengths within the DFA, by FMU, are: - W11 - < 50.0 km - W13 - < 220.0 km	Annual Operating Plan: - Schedule of seasonal/temporary roads for use in upcoming Timber Year. Stewardship Report: - Length of seasonal/temporary roads opened and used by forestry operators on the DFA, by FMU.	< 20 % in excess of the target within each FMU.	Adjust strategies in subsequent AOPs.
6			1.1.1.4. Maintain plant communities uncommon in DFA or Province.	Existence of process for maintaining plant communities uncommon in the DFA and/or Province (1.1.1.4).	By December 31, 2008, develop and implement a process for identifying uncommon plant communities, training field staff in their identification, tracking their location and protecting.	Annual Report: - Summary of progress on developing and implementing process for maintaining identified uncommon plant communities in the DFA and/or in the province. Stewardship Report: - To be determined.	Six (6) months (June 30, 2009).	Provide rationale and action plan with timeline for development and implemention.

ID	CSA SFM Element	Value	Objective	Indicator	DFMP Target	Reporting	Acceptable Variance	Response
7			1.1.1.5. Maintain unique habitats provided by wildfire and blowdown events.	Area of unsalvaged burned forest (1.1.1.5A).	Adhere to Alberta gov't's Fire Salvage Directive and FireSmart objectives.	Annual Report: - Number of fires that occurred on the DFA, and their associated areas. Stewardship Report: - Number of fires that occurred on the DFA, and their associated areas; - Number of fires and the area of those fires in which salvage operations were conducted.	0 % at the end of the 10-year DFMP period.	Adjust strategies in AOPs.
8				Area of unsalvaged blowdown forest (1.1.1.5B).	Adhere to the following merchantable blowdown retention values: Blowdown patch >= 100 ha: - > 10% in patches 10-100 ha - > 5% in small patches or single trees. Blowdown patches < 100 ha - > 10% in small patches or single trees.	Annual Report: - Progress on development and implementaiton of blowdown salvage strategy consistent with targets. Stewardship Report: - Reporting aspects defined in blowdown salvage strategy.	0 % at the end of the 10-year DFMP period.	Adjust strategies in AOPs.
9			1.1.1.5. Retain ecological values and functions associated with riparian zones.	Number of non-conformance incidents with FMA Operating Ground Rules or Alberta gov't. approved Millar Western riparian management strategy (1.1.1.6).	Zero (0) annual incidents of non-conformance.	Annual Report: - Number of non-conformance incidents and summary of each. Stewardship Report: - Same as Annual Report.	0 non-conformance incidents.	Corrective actions and review of existing policies and procedures.
10			1.1.1.6. Investigate alternative management regimes of forest stands adjacent to water bodies in a research context.	Volume and area harvested in riparian areas under Alberta gov't. approved Millar Western Riparian Management Strategy (1.1.1.7).	Harvest <= 25% volume/area annually in riparian areas adjacent to harvest areas.	To be defined upon completion of riparian management strategy.	To be defined upon completion of riparian management strategy.	To be defined upon completion of riparian management strategy.
11		1.1.2. Local / stand scale biodiversity.	1.1.2.1. Retain stand level structure.	Percent of FMU AAC residual structure (living and dead), within a harvest area, representative of the status (living/dead), size and species distribution of the overstorey trees by operating compartment (1.1.2.1A).	Retain 1% of total AAC volume as residual structure annually, by FMU, distributed over selected operating compartments.	Annual Report: - Volume and percentage of AAC of live merchantable structure retention left on the DFA, by compartment and FMU. Stewardship Report: - Volume and percentage of AAC of live merchantable structure retention left on the DFA, by compartment and FMU by year.	+ / - 10 % of the target, at the end of the 10-year DFMP period	Adjust strategies in subsequent FMPs.
12				Percent of harvested area by FMU, with downed woody debris volume equivalent to pre-harvest conditions (1.1.2.1B).	>= 75% of annual harvest area with DWD equivalent to pre-harvest conditions, by FMU.	Stewardship Report: - Actual percent of harvested area in DFA in which DWD levels are equivalent to, or greater than, pre-harvest levels	+/- 20% of the target, at the end of the 10-year DFMP period.	Adjust strategies in subsequent AOPs and FMPs.
13			1.1.2.2. Maintain integrity of sensitive sites.	Number of non-conformances incidents with FMA OGRs in relation to identified sensitive sites located on the DFA (1.1.2.2).	Zero (0) annual incidents of non-conformance.	Annual Report: - Number of non-conformance incidents and summary of each. Stewardship Report: - Same as Annual Report.	zero (0) non-conformance incidents.	Corrective actions and review of existing policies and procedures.
14			1.1.2.3. Maintain aquatic biodiversity by minimizing impacts of water crossings.	Number of non-conformance incidents with Millar Western's OGRs or Code of Practice for Water Course Crossings, by FMU (1.1.2.3).	Zero (0) annual incidents of non-conformance.	Annual Operating Plan: - Number and type of watercourse crossings installed on all roads by conformance status. Annual Report: - Number of non-conformance incidents and summary of each. Stewardship Report: - Same as Annual Report.	zero (0) non-conformance incidents.	Corrective actions and review of existing policies and procedures.

ID	CSA SFM Element	Value	Objective	Indicator	DFMP Target	Reporting	Acceptable Variance	Response
15	1.2. Species diversity.	1.2.1. Viable populations of identified plant and animal.	1.2.1.1. Maintain habitat for identified indicator species.	Area of suitable habitat within each FMU for each biodiversity assessment species (1.2.1.1).	At the start of the 2017 Timber Year, achieve the area, and proportion of area, of suitable habitat for the biodiversity assessment species defined in target tables.	Stewardship Report: - Summary of adherance to SHS. 2017 DFMP: - Actual proportion of suitable area for each BAP species. - Variance between target and actual area of suitable habitat for each BAP species. 2007 DFMP: - Tabular summary of projected area of suitable habitat for each BAP species at years 0, 10, 50, 100 and 200 - Maps showing projected distribution of suitable habitat for each BAP species at years 0, 10 and 50.	< 10% below target area for each species.	Adjust strategies in subsequent FMPs.
16	1.3. Genetic diversity.	1.3.1. Genetic integrity of natural tree populations.	1.3.1.1. Retain wild forests populations for each tree species in each seed zone through establishment of in-situ reserves by the organizations or in cooperation with Alberta gov't.	Number and area (ha) of in-situ genetic conservation areas (1.3.1.1).	Establish zero (0) genetic conservation areas for each seed zone conforming with Section 20 of STIA.	Stewardship Report: - Number of in-situ conservation areas required in each seed zone and number established on DFA. - Map of established in-situ conservarion areas.	N/A	N/A
17			1.3.1.2. Retain wild forests genetic resources through ex-situ conservation.	Number of provenances and genetic lines in ex-situ gene banks and trials (1.3.1.2).	Active ex-situ conservation program for all Controlled Parentage Program plan species in cooperation with Alberta gov't.	Stewardship Report: - Number of ex-situ conservation areas required in each seed zone and the number and spatial location of existing areas in cooperation with Alberta gov't.	N/A	N/A
18	1.4. Protected areas.	1.4.1. Areas with minimal human disturbance within managed landscape.	1.4.1.1. Integrate transboundary values and objectives into forest management.	Stakeholder consultation regarding protected areas as identified through government processes (1.4.1.1).	Maintain ongoing consultation with relevant protected areas agencies.	Annual Report: - Whether new parks or protected areas are proposed within or adjacent to DFA, as confirmed by Alberta gov't.; - Summary of consultation and outcomes related to proposed or existing parks or protected areas.	None.	Adjust strategies in subsequent FMPs.
CCFM Criterion: 2. Ecosystem Productivity								
19	2.1. Ecosystem resilience.	2.1.1. Reforested harvest areas.	2.1.1.1. Meet reforestation targets on all harvest areas.	Annual percent of satisfactory regenerated surveys (establishment surveys and performance surveys) by company and FMU (2.1.1.1A).	100 % of establishment surveys achieve Satisfactorily Regenerated (SR) status and 100 % of performance surveys achieve Free-to-grow (FTG) status.	ARIS: - As defined by Alberta gov't. Annual Report: - Summary, by FMU and forestry operator, the amount of area surveyed and the results of the surveys.	< 10%.	Assess NSR areas and develop and implement action plans.
20				Cumulative percent of satisfactory regenerated surveys (establishment surveys and performance surveys) by company and FMU (2.1.1.1B).	100 % of establishment surveys achieve Satisfactorily Regenerated (SR) status and 100 % of performance surveys achieve Free-to-grow (FTG) status.	Stewardship Report: - Cumulative number of harvests blocks and areas in which regeneration surveys were conducted, by regeneration success, forestry operator and FMU.	< 10%.	Assess NSR areas and develop and implement action plans.
21				Forestry Operator specific regenerated strata distribution percentage by subunit (2.1.1.1C).	At the start of the 2017 Timber Year, each operator to achieve their harvest area adjusted regenerated strata percent distribution.	Annual Report: - Regenerated area and percent by strata, forestry operator and FMU. Stewardship Report: - Overall regenerated area and percent by strata, forestry operator and FMU. 2017 DFMP: - Overall regenerated area and percent by strata, forestry operator and FMU; - Variance between target and actual are and percent regenerated by strata, forestry operator and FMU.	+/- 5% by strata.	Annual adjustments to planned treatments and strata declarations.
22		2.1.2. Maintenance of forest landbase.	2.1.2.1. Limit conversion of forest landbase to other uses.	Percent of change in managed landbase area (2.1.2.1).	At the start of the 2017 Timber Year, < = 2.5% of managed landbase converted to non-timber production uses.	Annual Report: - Number of dispositions and area of dispositions withdrawn from the managed landbase; - Number of dispositions are area of dispositions returned to the managed landbase; - Cumulative net managed landbase area withdrawn. Stewardship Report: - Same as annual report.	N/A	Complete landbase classification for next DFMP.

ID	CSA SFM Element	Value	Objective	Indicator	DFMP Target	Reporting	Acceptable Variance	Response
23			2.1.2.2. Recognize lands affected by insects, disease or natural calamities.	Area affected by insects, disease or natural calamities as reported by Alberta gov't. and Millar Western (2.1.2.2).	Report all identified areas where insect, disease or natural calamity affect an area >= 10 ha on the DFA.	Annual Report: - Summary of total area known to be affected by insect, disease and natural calamities, where individual occurrences >= 10 ha.	Report actuals.	N/A
24			2.1.2.3. Reduce the susceptibility of forest stands to mountain pine beetle.	Percent of Rank 1 and Rank 2 mountain pine beetle susceptible stand area harvested (2.1.2.3A).	By the start of the 2017 Timber Year, harvest Rank 1 and Rank 2 MPB stand area: - W11 - 2,504 ha (12%) - W13 - 15,477 ha (18%)	Annual Report: - Annual and cumulative area harvested and the percent of harvest area in Rank 1 and Rank 2 stands on the managed landbase; - Variance between actual percent of harvest area within Rank 1 and Rank 2 stands and the target. Stewardship Report: - Same as Annual Report.	+/- 10% at the end of the 2017 timber year.	Based on annual assessments, consider revising harvest sequence where feasible.
25				Percent of identified MPB infested stand area harvested (2.1.2.3B).	Harvest 100% of the area identified as having "green" or "red-fall" MPB attacked trees, where economically feasible, on the managed landbase, or where authorized by Alberta gov't.	Annual Report: - Annual and cumulative area of the managed and gross landbase that have been identified as being infested with MPB, and the total area and % area that have been harvested. Stewardship Report: - Same as Annual Report.	< 50 % of the area in the Managed Landbase at the end of the 2017 timber year.	Based on annual assessments, consider revising harvest sequence where feasible.
26			2.1.2.4. Alter the current pine age structure of the forest to reduce long-term MPB susceptibility.	Area of pure pine and mixedwood pine stands by 'mature' and 'old' seral stage (2.1.2.4).	At the start of the 2017 Timber Year, achieve the area of pure pine and mixedwood pine stands in the mature and old seral stages as summarized in target tables.	Stewardship Report: - Summary of the amount of pure pine and mixedwood pine stand area in the mature and old seral stages.	+/- 20%.	Adjust strategies in subsequent FMPs.
27		2.1.3. Control invasive species.	2.1.3.1. Control non-native plant species (weeds).	Existence and implementation of a noxious weed program (2.1.3.1).	Continue to maintain existing Noxious Weed Program, and revise where necessary following annual review.	Stewardship Report: - Summary of the results of all noxious weed inspections conducted; - Summary of any significant changes to noxious weed program.	None.	Adjust noxious weed program if deficiencies are encountered.
28		2.2.1. Forest health.	2.2.1.1. Maintain forest health.	Existence of programs to select and monitor amphibian and soil micro-organism indicator species (2.2.1.1).	Continue Company support and participation in the SOFA and Soil Micro-organism Study, and incorporate findings where applicable.	Stewardship Report: - Summary of progress and findings, and where findings have been incorporated in to operational and/or strategic planning.	None.	Re-define targets and timelines.
CCFM Criterion: 3. Soil and Water								
29	3.1. Soil quantity and quality.	3.1.1. Soil productivity.	3.1.1.1. Minimize impact of roading and bared areas in forest operations.	Number of incidents of non-conformance with respect to bared area (roads and landings) within harvest areas (3.1.1.1).	Zero (0) annual incidents of non-conformance.	Annual Report: - Number of non-conformance incidents and summary of each. Stewardship Report: - Same as Annual Report.	0 non-conformance incidents.	Corrective actions and review of existing policies and procedures.
30			3.1.1.2. Minimize Incidence of soil erosion and slumping.	Number of incidents of non-conformance with respect to reportable soil erosion and slumping (3.1.1.2).	Zero (0) annual incidents of non-conformance.	Annual Report: - Number of non-conformance incidents and summary of each. Stewardship Report: - Same as Annual Report.	0 non-conformance incidents.	Corrective actions and review of existing policies and procedures.
31			3.1.1.3. Reduce compaction of soils within harvest areas.	Number of incidents of non-conformance with respect to rutting in harvest areas (3.1.1.3).	Zero (0) annual incidents of non-conformance.	Annual Report: - Number of non-conformance incidents and summary of each. Stewardship Report: - Same as Annual Report.	0 non-conformance incidents.	Corrective actions and review of existing policies and procedures.
32	3.2. Water quantity and quality.	3.2.1. Water quantity.	3.2.1.1. Limit impact of timber harvesting on water yield.	Percent of eligible third order watersheds in which the annual average runoff coefficient value is > 15% of the baseline condition (3.2.1.1A).	Zero (0) percent of the eligible third order watersheds exceed the baseline annual average runoff coefficient value by > 15 % in any period over the 200-year planning horizon.	Stewardship Report: - Modeled average RC value for third order watersheds and identify of those that exceed baseline RC value by >15% - Percent of eligible watersheds that exceed baseline RC value by > 15%.	0%.	Consider altering harvest location and timing to mitigate effects.

ID	CSA SFM Element	Value	Objective	Indicator	DFMP Target	Reporting	Acceptable Variance	Response
33				Percent of eligible first order watersheds in which the annual average runoff coefficient value is > 50 % of the baseline condition (3.2.1.1B).	Maximum 5% of the eligible first order watersheds exceed the baseline annual average runoff coefficient value by > 50% and none exceed the baseline condition by 100%.	Stewardship Report: - Modeled average RC value for first order watersheds and identify of those that exceed baseline RC value by >50% - Percent of eligible watersheds that exceed baseline RC value by > 50%.	+ 5%.	Consider altering harvest location and timing to mitigate effects.
34			3.2.1.2. Maintain water quality.	Existence of research initiative to develop relationship between operations and water quality, and implementation of recommendations to mitigate negative impact on water quality (3.2.1.2).	Continue research initiative until 2012, and incorporate relevant findings into strategic and/or operational planning.	Stewardship Report: - Status of the water quality research initiative; - Summary of recommendations that the company has implemented for purposes of mitigating impact of water quality due to forestry operations.	N/A	N/A
35		3.2.2. Effective riparian areas.	3.2.2.1. Minimize impact of operations on riparian areas.	Riparian buffers maintained as outlined in FMA operational ground rules or Alberta gov't. approved riparian management strategy (3.2.2.1).	Zero (0) annual incidents of non-conformance.	Annual Report: - Number of non-conformance incidents and summary of each. Stewardship Report: - Same as Annual Report.	0 non-conformance incidents.	Corrective actions and review of existing policies and procedures.
CCFM Criterion: 4. Global Ecological Cycles								
36	4.1. Carbon uptake and storage.	4.1.1. Understanding of carbon balance on DFA.	4.1.1.1. Produce a carbon budget for DFA.	Existence of carbon budget analysis on the Preferred Forest Management Strategy of the 2007 DFMP (4.1.1.1).	Complete a carbon budget of the DFA as part of the 2007 DFMP.	Annual Report: - Summary of any additional carbon budget analysis completed on the DFA. Stewardship Report: - Same as Annual Repor. DFMP: - Modeled carbon levels on the DFA from 2007 to 2017.	N/A	N/A
37	4.2. Forest land conversation.	This VOIT is addressed under VOIT 22 (2.1.2.1).						
CCFM Criterion: 5. Multiple Benefits to Society								
38	5.1. Timber and non-timber benefits.	5.1.1. Sustainable timber supplies.	5.1.1.1. Establish appropriate AACs.	Compliance with Annex 1 of the Alberta Forest Management Planning Standard (April 2006), regarding the process for establishing appropriate AACs (5.1.1.1).	Receive Alberta gov't's approval of the AAC, and the AAC determination process for the DFA.	2007 DFMP: - Process used is documented in Chapter 5 - Forecasting. Annual Report: - Alberta gov't's response to AAC determination process: - Any re-calculation of AAC pror to the 2017 DFMP. Stewardship Report: - Same as Annual Report.	Variations are permitted with Alberta gov't's approval.	Provide Alberta gov't. with justification or information regarding variances.
39		5.1.2. Maintain non-timber supplies.	5.1.2.1. Maintain communication with non-timber commercial right holders.	Adherence to communication initiatives related to non-timber commercial rights holders, as defined in the external communications section of the DFMP Communication Implementation Plan. (5.1.2.1).	Adhere to relevant external communication initiatives related to non-timber commercial rights holders.	Annual Report: - Summary of external consultation and communication initiatives, and the qualitative assessment of their success; - Summary of the stakeholder registry (the number of members by stakeholder class).	None.	Review and undertake actions where required.
40			5.1.2.2. Protect heritage values.	Number of non-conformance incidents as per The Heritage Resources Act. (5.1.2.2).	Zero (0) annual incidents of non-conformance.	Annual Report: - Number of non-conformance incidents and summary of each. Stewardship Report: - Same as Annual Report.	0 non-conformance incidents.	Corrective actions and review of existing policies and procedures.

ID	CSA SFM Element	Value	Objective	Indicator	DFMP Target	Reporting	Acceptable Variance	Response
41			5.1.2.3. Minimize visual impact of harvesting activities along defined corridors.	Development and implementation of process for identifying areas of high aesthetic value and mitigating visual impacts of harvest operations (5.1.2.3).	By November 30, 2008, develop and implement process for identifying areas of high aesthetic value and for mitigating visual impacts resulting from forestry operations.	Annual Report: - Progress on development and implementation of process for identifying areas of high aesthetic value and mitigating visual impacts of harvest operations. Stewardship Report: - Same as Annual Report.	Six (6) months (May 31, 2009).	Provide rationale and action plan with timeline for development and implemention.
42	5.2. Communities and sustainability.	5.2.1. Risk to communities and landscapes values from wildfire is low.	5.2.1.1. To reduce wildfire threat potential by reducing fire behavior, fire occurrence, threats to values at risk and enhancing fire suppression capability.	Percent of Whitecourt FireSmart Community Zone area in the 'extreme' and 'high' Fire Behaviour Potential rating categories (5.2.1.1A).	At the start of the 2017 Timber Year, limit the combined area in the 'extreme' and 'high' FPB rating category to 28% (31,496 ha of the 110,901 ha) of the WFCZ.	Stewardship Report: - Actual area and percent change in the "high" and "extreme" FBP ratings. DFMP: - Tabular projections of areas in "high" and "extreme" FBP rankings at years 0, 10, 20 and 50; - Maps showing projection of areas in "high" and "extreme" FBP rankings at years 0, 10, 20 and 50.	None.	Consider altering harvest location and timing to mitigate effects.
43				Percent of DFA area in the 'extreme' and 'high' Fire Behaviour Potential rating categories (5.2.1.1B).	At the start of the 2017 Timber Year, limit the combined area in the 'extreme' and 'high' FPB rating category to 37% (169,209 ha of the 452,471 ha) of the DFA.	Stewardship Report: - Actual area and percent change in the "high" and "extreme" FBP ratings. DFMP: - Tabular projections of areas in "high" and "extreme" FBP rankings at years 0, 10, 20 and 50; - Maps showing projection of areas in "high" and "extreme" FBP rankings at years 0, 10, 20 and 50.	None.	Consider altering harvest location and timing to mitigate effects.
44		5.2.2. Provide opportunities to derive benefits and participate in use and management.	5.2.2.1. Integrate other uses and timber management activities.	Adherence to communication initiatives related integrating other uses and timber management activities, as defined in the external communications section of the DFMP Communication Implementation Plan (5.2.2.1).	Adhere to communication initiatives related to the integration of other uses and timber management activities.	Annual Report: - Summary of external stakeholder consultation and communication initiatives, and the Company's qualitative assessment of their success; - Summary of the stakeholder registry (the number of members by stakeholder class). Stewardship Report: - Same as Annual Report.	None.	Provide rationale and action plan with timeline for development and implemention.
45		5.2.3. Forest productivity.	5.2.3.1. Maintain Long Run Sustained Yield Average.	Difference between managed and natural stand yield (5.2.3.1).	No net decrease in stand yield from natural to managed stands.	Stewardship Report: - Progress on development and implementation of Alternative Regeneration Standards; - Summary reports as defined as part of these new standard, when implemented.	N/A	Yield curves will be re-developed as part of the 2017 DFMP.
CCFM Criterion: 6. Accepting Society's Responsibility for Sustainable Development.								
46	6.1. Respect for Aboriginal forest values knowledge and uses.	6.1.1. Compliance with government regulations and policies.	6.1.1.1. Implement Public involvement program.	Meet Alberta gov't's current expectations for aboriginal consultation (6.1.1.1).	Consult, at the community level, with designated representatives of aboriginal communities defined by Alberta gov't.	Annual Report: - Identify aboriginal communities that participate in planning processes; - Summary of all initiatives directly focussed at contacting and consulting with aboriginal communities and summary of deliberations and achievements. Stewardship Report: - Same as Annual Report.	None.	Review shortcomings and determine means to resolve.
47		6.1.2. Provide economic opportunities to Aleis Nakota Sioux Nation.	6.1.2.1. Provide forest contract opportunities to the Alexis Nakota Sioux Nation on an annual basis as per FEDA.	Contract opportunities provided to the Alexis Nakota Sioux Nation (i.e. logging and silviculture) (6.1.2.1).	Provide contract opportunities to Alexis annually.	Annual Report: - Summary of contract opportunities offered to the Alexis, those undertaken and the status of each. Stewardship Report: - Same as Annual Report.	None.	N/A

ID	CSA SFM Element	Value	Objective	Indicator	DFMP Target	Reporting	Acceptable Variance	Response
48		6.1.3. Sustain positive and productive working relationship with the Alexis Nakota Sioux Nation.	6.1.3.1. Maintain existing consultations with Alexis Nakota Sioux Nation on forest management and economic development as per FEDA.	Number of Environmental Co-Stewardship Committee (ECSC) meetings (6.1.3.1).	Hold four (4) ECSC meetings annually.	Annual Report: - Updates to ECS membership; - Summary of meetings. Stewardship Report: - Same as Annual Report.	One (1) meeting annually.	Provide a rationale in the Annual Report and Stewardship Report.
49	6.2. Public participation and information for decision-making.	6.2.1. Meaningful public involvement achieved.	6.2.1.1. Implement public involvement program.	Meet expectations of Section 5 of CSA Z809-2002 - Public Participation Requirements (6.2.1.1)	Adhere to the communication initiatives that satisfy the expectations of Section 5 of CSA Z809-2002.	Annual Report: - Summary of status of implementation of DFMP Implementation Communication Plan and rationale for any deviation; - Summary of all consultation and communication activities. Stewardship Report: - Same as Annual Report.	None.	Review shortcomings and determine means to resolve.
50		6.2.2. Increase knowledge of forest management operations.	6.2.2.1. Work with various stakeholders to enhance the demonstration/educational value of the Huestis Forest.	Contribution to, and implementation of, a management plan for Huestis Forest (6.2.2.1).	Work with Alberta gov't. and other stakeholders, as a of Board of Directors, to develop and implement a management plan to enhance the demonstration and educational value of Huestis Forest, by December 31, 2008.	Annual Report: - Status of the creation of the committee and development and implementation of management plan; - Summary of initiatives that Millar Western has undertaken in support of Huestis Demonstration Forest. Stewardship Report: - Same as Annual Report.	Six months (June 30, 2009)	Review shortcomings and determine means to resolve.
51	6.3. Information for decision-making.	6.3.1. Provide measures to reach boarder public in regards to forest management information.	6.3.1.1. Incorporate a virtual open house that will be available on the Millar Western Forest Products Ltd. Internet site.	Development and incorporation of Virtual Open House into corporate website (6.3.1.1).	Develop and incorporate virtual open house into existing Millar Western Internet website by July 31, 2008.	Annual Report: - Status of the implementation of the virtual open house; - Following implementation, the number of hits to this component of the website. Stewardship Report: - Same as Annual Report.	Six months: January 31, 2008)	Review shortcomings and determine means to resolve.
52		6.3.2. Maintain effective communication with a variety of stakeholders.	6.3.2.1. Maintain a public advisory committee reflective of stakeholder concerns on the DFA.	Establishment of permanent Public Advisory Committee (PAC) and number of group meetings (6.3.2.1).	Establish Public Advisory Committee by December 31, 2007, and hold a minimum of four (4) meeting annually, starting from the date that the group is established	Annual Report: - Status of the establishment of the PAC; - Summary of membership, meeting dates and topics covered at each meeting. Stewardship Report: - Same as Annual Report.	None.	Review shortcomings and determine means to resolve.
53		6.3.3. Provide measures to reach broader public in regards to forest management information.	6.3.3.1. Develop 24-hour hotline for public comments regarding forestry issues.	Implementation of a 24-hour toll-free telephone hotline (6.3.3.1)	Launch 24-hour toll-free hotline by February 29, 2008.	Annual Report: - Status of the implementation of the 24-hour hotline. Stewardship Report: - Same as Annual Report.	Six months (August 31, 2008)	Review shortcomings and determine means to resolve.

2.2 VOIT Detailed Description

This section provides detailed information for each of Millar Western's 2007 DFMP VOITs. Where referenced within these detailed descriptions, Section 4 – Supplemental Information, contains additional information that is intended to provide clarification on the indicators or targets.

2.2.1 Biological Diversity

As described within the CSA Z809-02 standard, the VOITs associated with the CCFM SFM Criterion 1 (Conservation of biological diversity), are intended to "conserve biological diversity by maintaining integrity, function, and diversity of living organisms and the complexes of which they are part." (CSA 2002) Millar Western has included 18 VOITs under this criterion.

VOIT 1 – Area of opening, mature + old, old and oldgrowthness forest by species strata for the gross and managed landbase for each FMU (1.1.1.1).

CCFM Criteria: 1. Biological Diversity.

CSA SFM element: 1.1. Ecosystem Diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.1. Landscape Scale Biodiversity.

Objective: 1.1.1.1. Maintain biodiversity by retaining the full range of cover types and seral stages.

Rationale

Forested landscapes are comprised of a complex arrangement of stand structures and processes too numerous to individually manage. To address this, Millar Western uses a coarse filter approach, considering the spatial and temporal arrangement of the stands and species mixes within the full range of ages, to provide for diversity in ecosystem structure across the landbase. By ensuring the maintenance of this structure, Millar Western provides for the processes within these structures. Forest products driven harvesting tends to target the mature and old seral stages, therefore specific management efforts are required to ensure that area within these categories are appropriately managed over time.

Current Status

The current status summaries of seral stage classes are derived from the 2007 timber year output from the forecasting completed on the Preferred Forest Management Scenario (PFMS). The seral stage class "opening" includes Millar Western's seral stages "clearing" and "regenerated". Refer to Section 4.1- Seral Stages and Section 4.2- Oldgrowthness components of the Supplemental Information section (Section 4) for background information on these topics.

Table 2 and Table 3 summarize the current status of the area in the opening, mature + old, old and oldgrowthness seral stages classes of the W11 gross and managed landbases respectively. Table 4 and Table 5 summarize the current status for the W13 gross and managed landbases respectfully.

Table 2. Current (2007) W11 gross landbase seral stage species strata area and area proportions.

BCG	Species Strata	Opening		Mature + Old		Old		Oldgrowthness		Total	
		Ha	%	Ha	%	Ha	%	Ha	%	Ha	%
D	AW	3,223	2%	29,009	20%	523	0%	11,722	8%	56,566	38%
	BW	9	0%	20	0%	4	0%	14	0%	142	0%
DC	AP	250	0%	1,234	1%	14	0%	380	0%	1,927	1%
	AS	732	0%	4,131	3%	-	0%	1,832	1%	5,639	4%
CD	PA	362	0%	834	1%	-	0%	75	0%	2,234	2%
	SA	1,675	1%	3,587	2%	12	0%	1,389	1%	5,554	4%
C	LT	60	0%	7,223	5%	942	1%	2,625	2%	25,536	17%
	PL	1,178	1%	5,900	4%	57	0%	1,218	1%	13,351	9%
	SB	166	0%	4,466	3%	-	0%	1,321	1%	26,399	18%
	SW	2,046	1%	7,447	5%	-	0%	776	1%	10,419	7%
		9,699	7%	63,851	43%	1,552	1%	21,352	14%	147,765	100%

Table 3. Current (2007) W11 managed landbase seral stage species strata area and area proportions.

BCG	Species Strata	Opening		Mature + Old		Old		Oldgrowthness		Total	
		Ha	%	Ha	%	Ha	%	Ha	%	Ha	%
D	AW	3,113	4%	27,238	31%	410	0%	11,087	13%	53,185	61%
	BW	7	0%	15	0%	4	0%	10	0%	130	0%
DC	AP	243	0%	835	1%	14	0%	369	0%	1,505	2%
	AS	730	1%	3,702	4%	-	0%	1,604	2%	4,875	6%
CD	PA	354	0%	807	1%	-	0%	71	0%	1,555	2%
	SA	1,668	2%	3,182	4%	5	0%	1,237	1%	5,066	6%
C	LT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PL	1,140	1%	5,725	7%	57	0%	1,185	1%	11,588	13%
	SB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	SW	2,026	2%	6,663	8%	-	0%	635	1%	9,463	11%
		9,280	11%	48,167	55%	489	1%	16,200	19%	87,369	100%

Table 4. Current (2007) W13 gross landbase seral stage species strata area and area proportions.

BCG	Species Strata	Opening		Mature + Old		Old		Oldgrowthness		Total	
		Ha	%	Ha	%	Ha	%	Ha	%	Ha	%
D	AW	6,983	3%	33,595	12%	755	0%	16,697	6%	67,384	25%
	BW	98	0%	47	0%	3	0%	19	0%	1,238	0%
DC	AP	1,303	0%	3,073	1%	54	0%	1,462	1%	6,413	2%
	AS	2,115	1%	14,410	5%	117	0%	7,674	3%	21,782	8%
CD	PA	4,025	1%	3,095	1%	56	0%	2,387	1%	10,871	4%
	SA	3,121	1%	9,850	4%	269	0%	5,780	2%	19,940	7%
C	LT	18	0%	2,022	1%	822	0%	1,422	1%	6,523	2%
	PL	24,907	9%	11,263	4%	2,172	1%	11,155	4%	70,743	26%
	SB	4,178	2%	14,030	5%	1,452	1%	6,001	2%	43,473	16%
	SW	7,074	3%	10,712	4%	53	0%	3,949	1%	21,336	8%
		53,821	20%	102,097	38%	5,754	2%	56,546	21%	269,703	100%

Table 5. Current (2007) W13 managed landbase seral stage species strata area and area proportions.

BCG	Species Strata	Opening		Mature + Old		Old		Oldgrowthness		Total	
		Ha	%	Ha	%	Ha	%	Ha	%	Ha	%
D	AW	5,345	3%	27,501	13%	693	0%	13,838	7%	57,786	28%
	BW	58	0%	44	0%	3	0%	18	0%	1,105	1%
DC	AP	1,167	1%	2,882	1%	50	0%	1,317	1%	5,987	3%
	AS	1,237	1%	12,909	6%	110	0%	6,579	3%	19,096	9%
CD	PA	3,758	2%	2,848	1%	55	0%	2,233	1%	10,272	5%
	SA	2,488	1%	8,772	4%	247	0%	4,791	2%	17,730	9%
C	LT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PL	23,060	11%	10,617	5%	2,131	1%	10,186	5%	66,718	32%
	SB	652	0%	4,882	2%	697	0%	2,767	1%	10,805	5%
	SW	5,286	3%	8,838	4%	42	0%	2,326	1%	16,917	8%
		43,051	21%	79,293	38%	4,028	2%	44,055	21%	206,415	100%

Target

At the start of the 2017 Timber Year, achieve the seral stage class species strata proportions as defined in the target tables.

The seral stage class "opening" includes Millar Western's seral stages "clearing" and "regenerated". Refer to section 4.1- Seral Stages and section 4.2- Oldgrowthness components of the Supplemental Information section (section 4) for background information on these topics.

Table 6 and Table 7 summarize maximum area target for the opening seral stage and the maximum area targets for the mature + old, old and oldgrowthness seral stages for the W11 gross and managed landbases respectfully. Table 8 and Table 9 summarize these targets for the W13 gross and managed landbases respectfully.

Table 6. Target (2017) W11 gross landbase seral stage species strata maximum and minimum areas.

BCG	Species Strata	Maximum Area Opening		Minimum Area Mature + Old		Minimum Area Old		Minimum Area Oldgrowthness		Total	
		(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	Ha	%
D	AW	7,640	5%	25,796	17%	1,373	1%	11,754	8%	56,566	38%
	BW	-	0%	100	0%	19	0%	32	0%	142	0%
DC	AP	137	0%	1,129	1%	71	0%	378	0%	1,927	1%
	AS	1,089	1%	3,690	2%	245	0%	1,785	1%	5,639	4%
CD	PA	296	0%	1,368	1%	-	0%	127	0%	2,234	2%
	SA	1,482	1%	2,867	2%	88	0%	1,455	1%	5,554	4%
C	LT	60	0%	9,185	6%	1,910	1%	4,237	3%	25,536	17%
	PL	1,309	1%	5,074	3%	135	0%	2,293	2%	13,351	9%
	SB	107	0%	5,641	4%	396	0%	1,975	1%	26,399	18%
	SW	3,003	2%	6,175	4%	-	0%	1,338	1%	10,419	7%
Total		15,124	10%	61,025	41%	4,236	3%	25,374	17%	147,765	100%

Table 7. Target (2017) W11 managed landbase seral stage species strata maximum and minimum areas.

		Maximum Area		Minimum Area							
	Species	Opening		Mature + Old		Old		Oldgrowthness		Total	
BCG	Strata	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	Ha	%
D	AW	7,538	9%	23,041	26%	1,264	1%	10,888	12%	53,185	61%
	BW	-	0%	91	0%	14	0%	27	0%	130	0%
DC	AP	137	0%	730	1%	71	0%	365	0%	1,505	2%
	AS	1,089	1%	2,927	3%	74	0%	1,520	2%	4,875	6%
CD	PA	296	0%	700	1%	-	0%	126	0%	1,555	2%
	SA	1,480	2%	2,448	3%	20	0%	1,272	1%	5,066	6%
C	LT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PL	1,309	1%	4,893	6%	135	0%	2,229	3%	11,588	13%
	SB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	SW	2,991	3%	5,294	6%	-	0%	1,077	1%	9,463	11%
Total		14,842	17%	40,124	46%	1,578	2%	17,505	20%	87,369	100%

Table 8. Target (2017) W13 gross landbase seral stage species strata maximum and minimum areas.

		Maximum Area		Minimum Area							
	Species	Opening		Mature + Old		Old		Oldgrowthness		Total	
BCG	Strata	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	Ha	%
D	AW	4,968	2%	41,857	16%	3,411	1%	15,855	6%	65,514	24%
	BW	7	0%	89	0%	-	0%	39	0%	1,238	0%
DC	AP	1,206	0%	2,540	1%	135	0%	711	0%	6,365	2%
	AS	777	0%	14,776	5%	1,269	0%	7,627	3%	20,248	8%
CD	PA	1,542	1%	2,294	1%	93	0%	678	0%	10,421	4%
	SA	3,158	1%	8,639	3%	332	0%	5,560	2%	19,253	7%
C	LT	18	0%	2,800	1%	1,526	1%	1,618	1%	6,523	2%
	PL	8,867	3%	7,425	3%	1,279	0%	3,744	1%	71,242	26%
	SB	5,965	2%	13,278	5%	1,357	1%	5,622	2%	42,936	16%
	SW	10,999	4%	8,722	3%	145	0%	3,650	1%	25,964	10%
Total		37,507	14%	102,420	38%	9,547	4%	45,103	17%	269,703	100%

Table 9. Target (2017) W13 managed landbase seral stage species strata maximum and minimum areas.

		Maximum Area		Minimum Area							
	Species	Opening		Mature + Old		Old		Oldgrowthness		Total	
BCG	Strata	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	Ha	%
D	AW	4,956	2%	34,932	17%	3,151	2%	13,024	6%	55,916	27%
	BW	-	0%	-	0%	-	0%	32	0%	1,105	1%
DC	AP	1,206	1%	2,306	1%	123	0%	601	0%	5,939	3%
	AS	757	0%	12,939	6%	1,229	1%	6,771	3%	17,561	9%
CD	PA	1,542	1%	2,033	1%	86	0%	572	0%	9,821	5%
	SA	2,538	1%	7,510	4%	290	0%	4,700	2%	17,043	8%
C	LT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	PL	8,867	4%	6,693	3%	1,201	1%	3,214	2%	67,216	33%
	SB	2,496	1%	3,489	2%	497	0%	2,329	1%	10,595	5%
	SW	9,250	4%	6,355	3%	94	0%	2,356	1%	21,219	10%
Total		31,612	15%	76,257	37%	6,671	3%	33,599	16%	206,415	100%

Target Supporting Information

The stated targets are based on the trade-off analysis process completed as part of the PFMS development.

Means of Achieving Target

These targets are the output values from the forecasting process under the PFMS. Millar Western and the other forestry operators will achieve these targets through successful implementation of the spatial harvest sequence (SHS) and adherence to the strategic and operational constraints incorporated into the forecasting process. Since these targets were identified through projecting the future state of the forest, based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence are likely to result in not achieving the targets. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Target Monitoring

These targets will be monitored through annually assessing Millar Western and the other forestry operators' adherence to the SHS on the DFA. The Company's completion of annual DFA inventory updates of harvesting and other unnatural disturbances and natural disturbances will provide the means to complete this assessment.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Actual area and proportion of area within each of the above-defined seral stage classes for each species strata; and

- Variance between actual area and proportion within each of the above-defined seral stage classes for each species strata and the target maximum and minimum values stated in the tables above.

Within *Appendix XXIV – VOIT Reporting*, the Company has reported the following, as required in the Planning Standard:

- Forecasted area and proportion of area within each of the above-defined seral stage classes for each species strata at years 0, 10, 50, 100 and 200 of the 200-year planning horizon for the W11 and W13 gross and managed landbases; and

- DFA maps of the above-defined seral stage classes at years 0, 10 and 50 of the 200-year planning horizon for the W11 and W13 gross and managed landbases.

Acceptable Variance

The acceptable variances associated with each seral stage class and species strata for the W11 and W13 gross and managed landbases are:

- For species strata area in the opening seral stage class, less than 110% of the target value; and

- For species strata area in the mature + old, old or oldgrowthness seral stage class, between 90% and 110% of the target value.

Response

Where the actual values are not within the defined acceptable variance, Millar Western will adjust their strategies in subsequent DFMPs.

Legal / Policy Requirement

Adherence to this target is required under the Planning Standard.

Operational and Strategic Plan Linkages

Compartment final harvest plans are developed consistent with the commitments defined in the DFMP, and the spatial harvest sequence developed as part of the PFMS within the DFMP. From the compartment operating plans, an annual block harvest schedule is developed as part of the annual operating plan. The annual operating plan is submitted for review and approval by the Alberta government. This approval provides Millar Western the authority to harvest in accordance with the schedule defined in the plan. Harvesting under the authority of the AOP is completed in accordance with the operating ground rules (OGR) tied to the FMA. These OGRs are developed in concert with the DFMP development, or following the DFMP approval.

VOIT 2 – Opening patch size distribution on the gross landbase for each FMU (1.1.1.2a).

CCFM Criteria: 1. Biological Diversity.

CSA SFM element: 1.1. Ecosystem Diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.1. Landscape Scale Biodiversity.

Objective: 1.1.1.2. Maintain biodiversity by avoiding landscape fragmentation.

Rationale

Forested landscapes are comprised of a complex arrangement of stand structures and processes too numerous to individually manage. To address this, Millar Western uses a coarse filter approach, considering the spatial and temporal arrangement of the stands and species mixes within the full range of ages, to provide for diversity in ecosystem structure across the landbase. By ensuring the maintenance of this structure, Millar Western provides for the processes within these structures. Older forest management policies designed to reduce clearcut sizes and other industrial disturbances have increased the fragmentation of the landscape from the natural patterns. Specific management efforts have been developed to return the patch size distributions closer to the natural state.

Current Status

The current opening patch size class area and proportion on the gross landbase of the DFA is summarized in Table 10.

Table 10. Current (2007) area, and proportion of total opening patch area, by defined opening patch size classes for the gross landbase by FMU.

	< 4 ha		>= 4 & < 100 ha		>= 100 & < 1000 ha		>= 1000 ha		Total Patch Area
FMU	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)
W11	59	0.6%	8,104	83.6%	1,537	15.8%	-	0.0%	9,699
W13	297	0.6%	16,552	31.6%	5,760	11.0%	29,713	56.8%	52,323

It is worth noting that a significant proportion of the opening patch area in the W13 gross landbase is contained within the >= 1,000 ha class. This area represents that created by the Virginia Hills Fire of 1998.

Target

At the start of the 2017 Timber Year, achieve the opening patch size distribution targets defined in Table 11.

Table 11. Target (2017) area, and proportion of total opening patch area, by defined opening patch size classes for the gross landbase by FMU.

	< 4 ha		>= 4 & < 100 ha		>= 100 & < 1000 ha		>= 1000 ha		Total Patch Area
FMU	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)
W11	129	0.9%	7,264	48.0%	6,276	41.5%	1,455	9.6%	15,124
W13	1,324	3.7%	18,792	52.1%	12,666	35.1%	3,287	9.1%	36,068

Target Supporting Information

Based on fire history analysis of the DFA, completed by Millar Western in consultation with natural disturbance and biodiversity specialists, the following long-term (200-year) patch size distribution objectives were input into the Forecasting process (each with an acceptable variation of +/- 2.5 %):

- < 4 ha – 0%
- >= 4 ha -< 100 ha – 76%
- >= 100 ha - < 1000 ha – 19%
- < 1000 ha – 5%

As seen in the projected targets in the above target tables, these long-term values differ from this indicator's target for the start of the 2017 Timber Year.

Means of Achieving Target

These targets are the output values from the forecasting process under the PFMS. Millar Western and the other forestry operators will achieve these targets through successful implementation of the spatial harvest sequence (SHS) and adherence to the strategic and operational constraints incorporated into the forecasting process. Since these targets were identified through projecting the future state of the forest, based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence are likely to result in not achieving the targets. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Monitoring

These targets will be monitored through annually assessing Millar Western and the other forestry operators' adherence to the SHS on the DFA. The Company's completion of annual DFA inventory updates of harvesting and other unnatural disturbances and natural disturbances will provide the means to complete this assessment.

Reporting

In the Annual Report, Millar Western will report the following:

- Actual harvest size statistics.

In the Stewardship Report, Millar Western will report the following:

- Actual opening patch area and proportion of total opening patch area within each opening patch size class;

- Variance between actual opening patch area and proportion of total opening patch area within each size class and the PFMS forecasted values.

Within *Appendix XXIV – VOIT Reporting*, the Company has reported the following, as required in the Planning Standard:

- Forecasted opening patch area and proportion of total opening patch area within each opening patch size class at years 0, 10 and 50 of the 200-year planning horizon for the W11 and W13 gross landbases; and

- DFA maps showing the distribution of opening patch polygons by size class at years 0, 10 and 50 of the 200-year planning horizon for the gross landbase.

Acceptable Variance

At the end of the 10-year DFMP period, the interim target distribution of opening patch area is achieved within +/- 10%, or progress to achieving the 200-year planning horizon target is demonstrated.

Response

Where actual values are not within the defined acceptable variances, Millar Western will adjust their strategies in subsequent DFMPs.

Legal / Policy Requirement

Adherence to this target is required under the Planning Standard.

Operational and Strategic Plan Linkages

Compartment final harvest plans are developed consistent with the commitments defined in the DFMP, and the spatial harvest sequence developed as part of the PFMS within the DFMP. From the compartment operating plans, an annual block harvest schedule is developed as part of the annual operating plan. The annual operating plan is submitted for review and approval by the Alberta government. This approval provides Millar Western the authority to harvest in accordance with the schedule defined in the plan. Harvesting under the authority of the AOP is completed in accordance with the operating ground rules (OGR) tied to the FMA. These OGRs are developed in concert with the DFMP development, or following the DFMP approval.

VOIT 3 – Percent of overall oldgrowthness forest area that is interior oldgrowthness forest by FMU for the gross landbase (1.1.1.2Bi).

CCFM Criteria: 1. Biological Diversity

CSA SFM element: 1.1. Ecosystem Diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA

Value: 1.1.1. Landscape Scale Biodiversity

Objective: 1.1.1.2. Maintain biodiversity by avoiding landscape fragmentation

Rationale

Forested landscapes are comprised of a complex arrangement of stand structures and processes too numerous to individually manage. To address this, Millar Western uses a coarse filter approach, considering the spatial and temporal arrangement of the stands and species mixes within the full range of ages, to provide for diversity in ecosystem structure across the landbase. By ensuring the maintenance of this structure, Millar Western provides for the processes within these structures.

The previous VOIT addresses the younger age patch distribution, while this VOIT addresses the older age patch distribution. Larger older age patches ensure that the interior older habitat is maintained. Interior older age patch distribution targets have been developed to ensure older age interior habitat reflects that of a natural state. Forest products driven harvesting tends to target the mature and old seral stages, therefore specific efforts are required to ensure that area within these categories are appropriately managed over time.

Current Status

The current percent of oldgrowthness forest that is interior oldgrowthness forest on the gross landbase is identified by FMU in Table 12. Refer to Section 4.2 - Oldgrowthness and Section 4.3 - Interior Oldgrowthness components of the Supplemental Information section (Section 4) for background information on these topics.

Table 12. Current (2007) oldgrowthness area and area of interior oldgrowthness forest by FMU on the gross landbase.

FMU	Total Oldgrowthness (ha)	Interior Oldgrowthness (ha)	Interior Oldgrowthness (%)
W11	20,305	10,893	54%
W13	49,603	34,277	69%

Target

At the start of the 2017 Timber Year, achieve the target proportions of oldgrowthness forest that is interior oldgrowthness forest within the gross landbase for each FMU as defined in Table 13. Refer to Section 4.2 - Oldgrowthness and Section 4.3 - Interior Oldgrowthness components of the Supplemental Information section (Section 4) for background information on these topics.

Table 13. Target (2017) oldgrowthness area and area of interior oldgrowthness forest by FMU on the gross landbase.

FMU	Total Oldgrowthness (ha)	Interior Oldgrowthness (ha)	Interior Oldgrowthness (%)
W11	25,237	13,870	55%
W13	43,610	28,139	65%

Target Supporting Information

The 2007 DFMP strategy, which targets mature and old pine stands to mitigate the potential effects on mountain pine beetle, results in a significant decrease to the interior oldgrowthness in W13.

Means of Achieving Target

These targets are the output values from the forecasting process under the PFMS. Millar Western and the other forestry operators will achieve these targets through successful implementation of the spatial harvest sequence (SHS) and adherence to the strategic and operational constraints incorporated into the forecasting process. Since these targets were identified through projecting the future state of the forest, based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence are likely to result in not achieving the targets. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Target Monitoring

These targets will be monitored through annually assessing Millar Western and the other forestry operators' adherence to the SHS on the DFA. The Company's completion of annual DFA inventory updates of harvesting and other unnatural disturbances and natural disturbances will provide the means to complete this assessment.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Actual overall proportion of oldgrowthness forest that is interior oldgrowthness forest for the gross landbase by FMU; and

- Variance between actual proportion of interior oldgrowthness forest and the PFMS forecasted values.

Within *Appendix XXIV – VOIT Reporting*, the Company has reported the following, as required in the Planning Standard:

- Forecasted overall area and percent of oldgrowthness forest that is interior oldgrowthness forest at years 0, 10 and 50 of the 200-year planning horizon; and

- DFA maps showing distribution of interior oldgrowthness polygons at years 0, 10 and 50 of the 200-year planning horizon.

Acceptable Variance

At the end of year 10 of the 200-year planning horizon, the actual values are not less than 80% of the target values defined for each FMU.

Response

Where target variances don't achieve that defined above, strategies will be adjusted in subsequent DFMPs.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Compartment final harvest plans are developed consistent with the commitments defined in the DFMP, and the spatial harvest sequence developed as part of the PFMS within the DFMP. From the compartment operating plans, an annual block harvest schedule is developed as part of the annual operating plan. The annual operating plan is submitted for review and approval by the Alberta government. This approval provides Millar Western the authority to harvest in accordance with the schedule defined in the plan. Harvesting under the authority of the AOP is completed in accordance with the operating ground rules (OGR) tied to the FMA. These OGRs are developed in concert with the DFMP development, or following the DFMP approval.

VOIT 4 – Open all-weather forestry road density by FMU (1.1.1.3A).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.1. Landscape scale biodiversity.

Objective: 1.1.1.3. Maintain biodiversity by minimizing access.

Rationale

Limiting access within the DFA provides a proactive means for reducing landscape fragmentation and vehicular traffic volume, as well as, improving the water quality and quantity attributes affected by road construction, maintenance and use.

Current Status

The current open all-weather forestry road densities within the DFA, by FMU, are:

W11 – 0.200 km/km^2

W13 – 0.278 km/km^2

Target

At the start of the 2017 Timber Year, the target open all-weather forestry road densities within the DFA, by FMU, are:

W11 – < 0.240 km/km^2

W13 – < 0.334 km/km^2

Target Supporting Information

As it relates to this indicator, open all-weather forestry roads are defined as follows:

- Any road, having a valid License of Occupation (LOC), capable of providing year-round truck (two- or four-wheel drive) travel and under disposition to a forestry operator.

Since Millar Western has not specifically tracked this indicator in the past, the Company determined the current status and the target for each FMU using an interim process that will be re-evaluated following implementation of the 2007 DMFP. The open all-weather road's included in the calculation were taken from the Company's most up-to-date spatial roads coverages, which included Millar Western, Mostowich Lumber Ltd., Spruceland Millworks Inc. and Weyerhaueser Canada Ltd.'s LOCs. The total length of the eligible LOCs was summed, and increased by 20%, to represent those roads that physically exist, but are not contained within the Company's spatial

road coverage. This adjusted length (in Km) was then divided by the total area of the applicable FMU (in Km^2) to determine the open all-weather road density.

Means of Achieving Target

Millar Western will achieve these targets through adhering to the *Compartment Road Network Access Plan* (*Appendix XVIII*), that was developed in consultation with both forest and energy industrial companies that currently operate within the DFA. Millar Western expects that there will be variations to this plan as operations among the industrial stakeholders on the DFA undertake operations that have not been accounted for, or when timelines differ from that in the plan. Under these circumstances, Millar Western will work together with the other stakeholder to minimize the amount of road necessary to meet both parties' objectives.

Target Monitoring

Millar Western will develop and enable a process for monitoring this target following implementation of the 2007 DFMP.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Actual density of the open all-weather forestry roads within the DFA, by FMU;
- Variance between actual density and the stated target density, for forestry roads, within the DFA, by FMU; and
- Actual density of open all weather forestry roads and other user roads within the DFA by FMU (Millar Western will report on the other user roads under the condition that the Alberta government provides Millar Western the other road users data in a format satisfactory to Millar Western within a reasonable period of time, following Millar Western's).

Acceptable Variance

The acceptable variance is < 20 % in excess of the target within each FMU. Since this is Millar Western's first attempt at assigning both a target and a variance for open all-weather forestry roads, the Company will be re-evaluating these values during the development of the 2017 DFMP.

Response

Where actual values exceed the acceptable variance defined above, Millar Western will adjust strategies in subsequent DFMPs to ensure that under normal circumstances the targets defined above are achieved.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Access planning is completed as part of the compartment development planning process, during which new access roads are considered within the existing network. The class of road and its construction specifications are determined at this time based on the anticipated lifetime and amount of travel. Longer-term roads require a license of occupation (LOC) for construction and use, and are approved for use as part of the Annual Operating Plan (AOP), whereas shorter-term roads, generally are just approved for construction and use as part of the AOP.

As part of the 2007 DFMP, Millar Western has prepared a *Compartment Road Network Access Plan* (*Appendix XVIII*) for the periods 2007 – 2016 and 2017 – 2026. This plan identifies, the Company's long-term access plan for the DFA, and is used in compartment planning development. Both the Compartment Road Network Access Plan and the compartment final harvest plan are used to coordinate activities with external stakeholders to minimize the construction of new access roads.

VOIT 5 – Open seasonal/temporary forestry road length by FMU (1.1.1.3B).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.1. Landscape scale biodiversity.

Objective: 1.1.1.3. Maintain biodiversity by minimizing access.

Rationale

Limiting access within the DFA provides a proactive means for reducing landscape fragmentation and vehicular traffic volume, as well as, improving the water quality and quantity attributes affected by road construction, maintenance and use.

Current Status

The current (2007) open seasonal/temporary road lengths within the DFA, by FMU, are:

W11 – 41.7 km

W13 – 183.3 km

Target

At the end of each timber year (beginning with the 2007 Timber Year), the target open seasonal/temporary road lengths within the DFA, by FMU, are:

W11 – < 50.0 km

W13 – < 220.0 km

Target Supporting Information

As it relates to this indicator, open seasonal/temporary roads are defined as follows:

- Any road constructed and used strictly for the extraction and delivery of wood fibre by a forestry operator, which is accessed through two or more timber harvest blocks. These roads are generally referred to as inter-block roads or secondary roads. Roads constructed and used strictly for the extraction and delivery of wood fibre within a single block, often referred to as tertiary road or in-block road, are exceptions to this definition.

Since Millar Western has not specifically tracked this indicator in the past, the Company determined the current status and the target for each FMU using an interim process that will be re-evaluated following implementation of the 2007 DMFP. The open seasonal/temporary roads included in the calculation were taken from the most up-to-date spatial roads coverages for the 2005 Timber Year compartments, which included Millar Western, Mostowich Lumber Ltd.,

Spruceland Millworks Inc. and Weyerhaeuser Canada Ltd.'s inter-block roads. The total length of the eligible inter-block roads was summed, and increased by 20%, to represent those roads that physically exist, but are not contained within the Company's spatial road coverage.

Means of Achieving Target

Millar Western will achieve these targets by limiting the length of seasonal/temporary forestry roads to the length required to implement the SHS, as it was the basis for determining the targets.

Target Monitoring

Millar Western will develop and enable a process for monitoring this target following implementation of the 2007 DFMP.

Reporting

In the Annual Operating Plan, Millar Western will report the following:

- Schedule of seasonal/temporary roads that the Company plans to use for operations in the upcoming timber year.

In the Stewardship Report, Millar Western will report the following:

- Length of seasonal/temporary roads opened and used by forestry operators on the DFA, by FMU, for Timber Year.

Acceptable Variance

The acceptable variance is < 20 % in excess of the target within each FMU at each Timber Year. Since this is Millar Western's first attempt at assigning both a target and a variance for open seasonal/temporary forestry roads, the Company will be re-assessing these values following the completion of each annual report.

Response

Where actual values exceed the acceptable variance defined above, Millar Western will adjust strategies in subsequent AOPs to ensure that under normal circumstances the targets defined above are achieved.

Legal / Policy Requirements

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Access planning is completed as part of the compartment development planning process, during which new access roads are considered within the existing network. The class of road and its

construction specifications are determined at this time based on the anticipated lifetime and amount of travel. Longer-term roads require a license of occupation (LOC) for construction and use, and are approved for use as part of the Annual Operating Plan (AOP), whereas shorter-term roads, generally are just approved for construction and use as part of the AOP.

As part of the 2007 DFMP, Millar Western has prepared a *Compartment Road Network Access Plan* (*Appendix XVIII*) for the periods 2007 – 2016 and 2017 – 2026. This plan identifies, the Company's long-term access plan for the DFA, and is used in compartment planning development. Both the Compartment Road Network Access Plan and the compartment final harvest plan are used to coordinate activities with external stakeholders to minimize the construction of new access roads.

VOIT 6 – Existence of process for maintaining plant communities uncommon in the DFA and/or Province (1.1.1.4).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.1. Landscape scale biodiversity.

Objective: 1.1.1.4. Maintain plant communities uncommon in DFA or Province.

Rationale

Maintaining plant communities uncommon in the DFA and/or province preserves landscape biodiversity. To accomplish this requires a comprehensive program to ensure that they are accurately defined, that field staff are aware of the objectives and are capable of identifying these communities, and that there are protection initiatives in place and that they are correctly implemented.

Current Status

Millar Western is in the process of developing a comprehensive program for maintaining plant communities that are uncommon in the DFA and/or Province.

The Company originally developed a listing of rare plant communities based on the Alberta Natural Heritage Information Centre's Preliminary Ecological Community Tracking List (Allen 2007), which identifies communities that are known or suspected of being rare either locally or on a larger extent. Based on feedback from the Alberta government, Millar Western has elected to not base their rare plant community listing on this source independently, but rather to undertake a more focussed investigation, as part of a comprehensive program.

To date, Millar Western and SRD have agreed to work together to incorporate the appropriate specialist(s), who can provide the expertise needed to develop the rare plant community list and the supporting processes for maintaining them on the DFA

Target

By December 31, 2008, develop and implement a process for identifying uncommon plant communities, training field staff in their identification, tracking their location and protecting.

Target Supporting Information

N/A

Means of Achieving Target

To successfully achieve the target, Millar Western will undertake the following:

- Consult with regional rare and endangered plant community specialist to develop a list of these communities that are a priority and that might occur within the DFA;

- Consult with regional rare and endangered plant community specialist to define targets for maintaining certain proportions of uncommon plant communities and to develop strategies for protective measures;

- Assemble and implement training program for the identification and protection of rare plant communities, to be attended by forestry operator's field staff and consultants; and

- Develop system for maintaining and updating rare plant community listing, for tracking location of known and predicted rare plant communities, and for capturing protection measures that have been undertaken.

Target Monitoring

Millar Western will monitor the development of this process through internal meetings. This process will include a component for monitoring the targets associated with maintenance of the identified uncommon plant communities in the DFA and/or in the province.

Reporting

In the Annual Report and the Stewardship report, Millar Western will provide a summary of their progress towards developing and implementing a process for maintaining identified uncommon plant communities in the DFA and/or in the province.

Once this target has been met, and the process described above is developed and implemented, Millar Western will report the following in the Stewardship Report, by FMU:

- The identity and area occupied by identified plant communities uncommon to the DFA and the Province;

- The percent of the identified uncommon plant communities on the DFA that have been disturbed by forestry operations; and

- Maps showing distribution of identified uncommon plant communities.

Acceptable Variance

The acceptable variance for the target is six (6) months (June 30, 2009).

Response

If the target of developing and implementing the process defined above is not achieved, Millar Western will provide the rationale in the Annual and Stewardship Reports, along with an action plan and timeline for completing development and implementing.

Legal / Policy Requirements

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Once developed, the rare plant community identification and protection process will be incorporated into Millar Western's environment management system.

VOIT 7 – Area of unsalvaged burned forest (1.1.1.5A).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.1. Landscape scale biodiversity.

Objective: 1.1.1.5. Maintain unique habitats provided by wildfire and blowdown events.

Rationale

Natural disturbances such as fire and blowdown provide unique structure/habitat. Following natural disturbances such as these, a significant proportion of the affected fibre is still usable for the manufacturing of forest products, albeit, generally at a higher operating cost with lower overall return in product quality. By adhering to salvage strategies that ensure retention of various levels of naturally disturbed area, local and landscape biodiversity will increase, ultimately providing for a wider range of values.

Current Status

Current status is not applicable for this indicator. Values will be calculated for salvage operations from 2007 forward.

Target

In accordance with the Alberta government's Fire Salvage Directive (Directive 2007-01, Fire Salvage Planning and Operations, January 11, 2007.), and FireSmart objectives, Millar Western will conduct fire salvage operations as follows:

Fires that affect < 1,000 hectares of Productive Landbase:

- Patch and single tree retention in harvest areas (cutblocks) will follow the standards in the approved Operating Ground Rules (OGR). In addition following the OGRs, patches retained should represent a range of burn severities from "destroyed" to "burned" to damaged (see "Fire Salvage Planning and Operations Directive, Jan 2007 for definitions).

Fires that affect > 1,000 hectares of Productive Landbase:

- Retention of unburned forest – unburned (green), windfirm areas of 4 ha and greater will be retained as structure.

- Retention of burned forest – 10-25% of the merchantable burned trees within the fire boundary will be retained. For fires greater than 10, 000 hectares, the 25% target is mandatory. For fires less than 10,000 ha the minimum target of 10% retention of merchantable burned trees within the fire boundary applies.

- Retention specifications fires > 10,000 ha – At the fire scale leave a minimum of 10% of area of netted down black timber in patches > 100 ha, or the largest patches available. At the cutblock level leave a minimum of 10% area of merchantable black timber in patches greater than 10 ha. Leave a minimum of 5% area of merchantable black timber in patches less than 10 ha and single trees.

- Retentions specifications for fires < 10,000 ha – At the fire scale and the cutblock scale leave 4% of black timber area in patches greater than 10 ha. Leave a minimum of 2% in patches less than 10 ha and single trees.

Target Supporting Information

N/A

Means of Achieving Target

Millar Western will achieve the targets defined above through incident- and site-specific salvage planning, in accordance with the Alberta government's directives and OGRs.

Target Monitoring

When applicable, Millar Western will monitor the amount of fire salvage through the use of aerial photography to define those fire salvage blocks harvested as a result our forest fire salvage program. Additionally, timber volume and timber condition will be available as tracked through the Company's log delivery and weigh scale program and subsequent reporting to the Alberta government's Timber Production and Revenue System (TPRS).

Reporting

In the Annual Report, Millar Western will report the following:

- Number of fires that occurred on the DFA, and their associated areas. Millar Western will request this information from the Alberta government's Forest Protection Branch prior to assembling the Annual Report.

In the Stewardship Report, Millar Western will report the following:

- Number of fires that occurred on the DFA, and their associated areas. Millar Western will request this information from the Alberta government's Forest Protection Branch prior to assembling the Annual Report; and

- Number of fires and the area of those fires in which salvage operations were conducted.

Acceptable Variance

The acceptable variance for this indicator is 0 % at the end of the 10-year DFMP period.

Response

Where actual values do not conform to the targets defined above, Millar Western will adjust strategies in AOPs to ensure that under normal circumstances the targets defined above are achieved.

Legal / Policy Requirement

This VOIT is a requirement of the Planning Standard and is associated with the Alberta government's Directive 2007-01, Fire Salvage Planning and Operations, January 11, 2007.

Operational and Strategic Plan Linkages

Any salvage plans associated with natural disturbances must be submitted to, and approved by, the Alberta government. Following approval, the Company will submit an amendment to their Annual Operating Plan to schedule these areas for harvest. Provided that the natural disturbance doesn't "affect the net productive forest landbase of a forest management unit by more than 2.5%" (Alberta 2006. Annex 1, Appendix B), there is no need to complete a new Timber Supply Analysis. No revisions are made to the spatial harvest sequence to reflect un-sequenced salvage operations on the landbase, rather these operations are simply accounted for in the spatial harvest sequence variance reporting.

VOIT 8 – Area of unsalvaged blowdown forest (1.1.1.5B).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.1. Landscape scale biodiversity.

Objective: 1.1.1.5. Maintain unique habitats provided by wildfire and blowdown events.

Rationale

Natural disturbances such as fire and blowdown provide unique structure/habitat. Following natural disturbances such as these, a significant proportion of the affected fibre is still usable for the manufacturing of forest products, albeit, generally at a higher operating cost with lower overall return in product quality. By adhering to salvage strategies that ensure retention of various levels of naturally disturbed area, local and landscape biodiversity will increase, ultimately providing for a wider range of values.

Current Status

Current status is not applicable for this indicator. Values will be calculated for salvage operations from 2007 forward.

Target

Blowdown patches >= 100 hectares

- Retain > 10% merchantable blowdown trees in patches 10 – 100 hectares
- Retain > 5% merchantable blowdown trees in small patches or as single trees

Blowdown patches < 100 hectares

- Retain > 10% merchantable blowdown trees in small patches or as single trees

Target Supporting Information

N/A

Means of Achieving Target

Millar Western will work with the Alberta government and the other forestry operators to develop a blowdown salvage strategy that meets the blowdown retention targets defined above. This strategy will include linkages to planning, operations, data collection and reporting operating procedures.

Target Monitoring

Millar Western will monitor the amount of blowdown salvage through the use of aerial photography that captures harvested areas on an annual basis.

Reporting

In the Annual Report, Millar Western will report the following:

- Progress on the development of a blowdown salvage strategy.

In the Stewardship Report, Millar Western will report the following:

- The reporting aspects as defined in the blowdown salvage strategy that Millar Western will develop.

Acceptable Variance

The acceptable variance for this indicator is 0% at the end of the 10-year DFMP period.

Response

Where actual values do not conform to the targets defined above, Millar Western will adjust strategies in subsequent AOPs to ensure that under normal circumstances the targets defined above are achieved.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Any salvage plans associated with natural disturbances must be submitted to, and approved by, the Alberta government. Following approval, the Company will submit an amendment to their Annual Operating Plan to schedule these areas for harvest. Provided that the natural disturbance doesn't "affect the net productive forest landbase of a forest management unit by more than 2.5%" (Alberta 2006. Annex 1, Appendix B), there is no need to complete a new Timber Supply Analysis. No revisions are made to the spatial harvest sequence to reflect un-sequenced salvage operations on the landbase, rather these operations are simply accounted for in the spatial harvest sequence variance reporting.

VOIT 9 – Number of non-conformance incidents with FMA Operating Ground Rules or Alberta government approved Millar Western riparian management strategy (1.1.1.6).

CCFM Criteria: 1. Biological diversity
CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.
Value: 1.1.1. Landscape scale biodiversity.
Objective: 1.1.1.5. Retain ecological values and functions associated with riparian zones.

Rationale

Adherence to the FMA Operating Ground Rules, or other Alberta government approved riparian management strategy, ensures proper management and retention of the ecological values and functions associated with riparian areas.

Current Status

During the 2005 Timber Year, zero (0) incidents of non-conformance with Millar Western's Operating Ground Rules (OGR) were reported.

Target

Zero (0) annual incidents of non-conformance.

Target Supporting Information

Millar Western's current OGRs will apply to this target until they are replaced by those associated with the 2007 DFMP. OGR negotiation is scheduled for the fall of 2007.

VOIT 10 describes Millar Western's intent to assemble and implement a riparian management strategy that would permit harvest activities within riparian areas, based on scientific research completed by the FORWARD group.

Means of Achieving Target

This target will be achieved through adhering to the OGRs or other Alberta government approved riparian management strategy in effect.

Target Monitoring

As per the Company's EMS, all incidents of non-conformance associated with environmental incidents will be reported and tracked within the Company's ISOSoft database.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will identify the number of non-conformance incidents associated with riparian zones, and will provide a summary of each. The summary will include the following information:

- Incident ID within the Company's ISOSoft database;
- Date, time and location of incident;
- General description of incident;
- General description of remedial measures (if applicable); and
- Resulting policy or procedural changes (if applicable).

Acceptable Variance

The acceptable variance is zero (0) non-conformance incidents.

Response

As per Millar Western's EMS, corrective actions will be undertaken immediately to address any incident of non-conformance. The Company will track incidents in the EMS and will undertake review of each incident to determine the cause and potential development of new, or modification of existing policies or procedures to reduce the likelihood of similar incidents occurring again.

Legal / Policy Requirement

This VOIT is associated with The Federal Fisheries Act, The Water Act and Millar Western's OGRs.

Operational and Strategic Plan Linkages

Operational controls in Millar Western's EMS are developed based on strategic planning commitments. Operational controls direct on-ground implementation of the strategic plan and allow for annual performance measurements.

VOIT 10 – Volume and area harvested in riparian areas under Alberta government approved Millar Western Riparian Management Strategy (1.1.1.7).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.1. Landscape scale biodiversity.

Objective: 1.1.1.6. Investigate alternative management regimes of forest stands adjacent to water bodies in a research context.

Rationale

As described in VOIT 10, adherence to the FMA Operating Ground Rules ensures proper management and retention of the ecological values and function associated with riparian areas. Based on research conducted by the Forest Watershed and Riparian Disturbance (FORWARD) project group, these values and functions can be maintained, whilst improving the health and vigor of stands, through the removal of a portion of the merchantable trees. Further research into these areas will provide Millar Western the necessary information to prepare and implement a comprehensive riparian management strategy.

Current Status

Currently, Millar Western only conducts harvest operations in riparian areas under approved riparian research programs.

Target

Harvest <= 25% volume/area annually in riparian areas adjacent to harvest areas.

Target Supporting Information

Since 1998, Millar Western has been working with research groups (most notably, the FORWARD group) to assess the impacts of various levels of timber harvesting in riparian buffers. Through the Company's participation in the FORWARD project, they have undertaken assessments on impacts of harvest operations in buffers on water quality, water quantity and amphibian populations. The outcomes of this research will form the foundation for the riparian management strategy that Millar Western will develop and submit to the Alberta government for review and approval.

Means of Achieving Target

This target will be achieved by following a riparian management strategy that will be developed as candidate areas are encountered. Millar Western will work with the Alberta government to develop approved strategies that will improve the health and vigor of selected riparian areas.

Target Monitoring

Monitoring will be completed as defined in the riparian management strategy.

Reporting

Reporting will be explicitly defined within the riparian management strategy. In general, reporting on harvest treatments within riparian areas will be summarized in Millar Western's Annual and Stewardship Reports.

Acceptable Variance

The acceptable variance for this target will be defined in the riparian management strategy.

Response

Response to activities that exceed the acceptable variance of the target will be defined in the riparian management strategy.

Legal / Policy Requirement

This VOIT will be subject to the approval conditions associated with the riparian management strategy.

Operational and Strategic Plan Linkages

Prior to conducting any harvesting within riparian areas operational controls will be developed as part of Millar Western's Environmental Management System and will be reviewed with the Alberta government.

VOIT 11 – Percent of FMU AAC residual structure (living and dead), within a harvest area, representative of the status (living/dead), size and species distribution of the overstorey trees by operating compartment (1.1.2.1A).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.2. Local/stand scale biodiversity.

Objective: 1.1.2.1. Retain stand level structure.

Rationale

Residual structure provides important habitat for various forest organisms. The implementation of the clearcut harvest system without consideration for residual structure results in removal of all vertical structure. By implementing strategies that retain and promote residual structure, the important stand level structure can be preserved and/or enhanced.

Current Status

Millar Western's OGRs currently provide guidelines for structural retention within the DFA, but there is no current stated target or process to account for the current amount of existing structural retention.

Target

Retain 1% of total AAC volume as residual structure annually, by FMU, distributed over selected operating compartments.

Target Supporting Information

During the development of the 2007 DFMP, and with the assistance of the Biodiversity Assessment Project (BAP) Impact Assessment Group (IAG), Millar Western assembled a DFA residual structure retention strategy (RSRS) that defines the following:

- Definition of residual structure;
- Target level of residual structure;
- Intended geographic distribution;
- Incorporation of residual structure into the planning process;
- Operational implementation of residual structure retention; and
- Reporting of residual structure retention

The RSRS is located in the Supplemental Information section of this document.

Means of Achieving Target

Millar Western and the other forestry operators will achieve this target through successful implementation of the RSRS, and through adhering to the OGR's.

Target Monitoring

As defined in the RSRS, Millar Western will monitor the amount of retained structure through aerial photography interpretation of harvested areas.

Reporting

As defined in the RSRS, in the Annual Report, Millar Western will report the following:

- Volume and percentage of AAC of live merchantable structure retention left on the DFA, by compartment and FMU. For clarity, Millar Western will not report on dead volume structure retention, even though it will exist.

In the Stewardship Report, Millar Western will report the following:

- Volume and percentage of AAC of live merchantable structure retention left on the DFA, by compartment and FMU by Timber Year. For clarity, Millar Western will not report on dead volume structure retention, even though it will exist.

Acceptable Variance

The acceptable variance is + / - 10 % of the target, at the end of the 10-year DFMP period.

Response

If at the end of the end of the 10-year DFMP period, the actual amount of structure retention is outside of the acceptable variance, Millar Western will adjust the strategies in subsequent DFMPs.

Legal / Policy Requirement

This VOIT is a requirement of the Planning Standard, and is associated the FMA OGRs. Implementation of strategies to achieve this target are subject to the Occupational Health and Safety Act and the Forest and Prairie Protection Act.

Operational and Strategic Plan Linkage

The Company's RSRS operational control ensures that strategic plan commitments regarding structure retention are realized on the ground. Millar Western will present this strategy to the FMA OGRs development committee for review and inclusion in the new OGRs.

VOIT 12 – Percent of harvested area by FMU, with downed woody debris volume equivalent to pre-harvest conditions (1.1.2.1B).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.2. Local/stand scale biodiversity.

Objective: 1.1.2.1. Retain stand level structure.

Rationale

Downed woody debris provides important habitat for various forest organisms. Some forest practices can reduce the amount of downed woody debris remaining on the forest floor following treatment. By restricting the amount of area treated intensively to remove woody debris, the biodiversity aspects associated with this material will be maintained.

Current Status

In the 2005 Timber Year (May 1, 2005 – April 30, 2006), 93 % of the areas harvested possessed equal to, or greater than, the pre-harvest amount of downed woody debris (out of 1,686 ha harvested, 118 ha were treated post harvest, with brush raking).

Target

>= 75% of annual harvest area with DWD equivalent to pre-harvest conditions, by FMU.

Target Supporting Information

During harvesting activities, Millar Western does not remove DWD, but through culling portions of the trees that are harvested, there is a potential to slightly increase the amount of DWD.

Following harvest, some harvest blocks are treated to reduce the fire risk or to create more favorable environments for planted or natural regeneration success. Brush raking and prescribed burning are two such treatments that reduce the amount of DWD within harvested areas. Millar Western has never treated harvest areas using prescribed burning, but does treat a portion of their harvest areas using brush raking.

Given the potential impact on DWD, harvest areas that have been treated by brush raking and/or prescribed burning, will be considered to possess less DWD following treatment than prior to harvesting.

Millar Western, like all other forestry operators that operate on Crown land, is required to adhere to The Forest and Prairie Protection Regulations regarding the disposal of slash, resulting from harvest, for the purpose of reducing fire risk. Millar Western intends to meet the target defined in this VOIT, while complying with these and all other regulations.

Means of Achieving Target

The annual silviculture operating plan outlines silvicultural activities that will be conducted during a particular Timber Year. During the development of this plan, the Company will ensure that the planned silviculture activities result in the target being achieved.

Target Monitoring

Within Millar Western's geographic information system (GIS), the Company tracks harvesting and silviculture treatments on harvest blocks.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Actual percent of harvested area in DFA in which DWD levels are equivalent to, or greater than, pre-harvest levels (i.e. the percent of the area harvested in which neither brush raking or prescribed burning were implemented).

Acceptable Variance

The acceptable variance is +/- 20% of the target, at the end of the 10-year DFMP period.

Response

If at the end of the end of the 10-year DFMP period, the actual amount of harvest area with DWD levels below pre-harvest condition is outside of the acceptable variance, Millar Western will adjust the strategies in subsequent AOPs and DFMPs.

Legal / Policy Requirements

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkage

Forest management companies must ensure adherence to the strategic direction provided by the detailed forest management plan to ensure all forest values are managed. The annual operating plan is the schedule of approved activities for a particular Timber Year including both harvest and regeneration activities.

VOIT 13 – Number of non-conformance incidents with FMA OGRs in relation to identified sensitive sites located on the DFA (1.1.2.2).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.2. Local/stand scale biodiversity.

Objective: 1.1.2.2. Maintain integrity of sensitive sites.

Rationale

Adherence to the FMA Operating Ground Rules ensures proper management of sensitive sites, thereby protecting integrity and biological value.

Current Status

In the 2005 Timber Year (May 1, 2005 – April 30, 2006), zero (0) incidents of non-conformance with the Operating Ground Rules were reported.

Target

Zero (0) annual incidents of non-conformance.

Target Supporting Information

Millar Western's OGRs, defines how the company will identify and protect sensitive sites on the DFA.

Within Millar Western's geographic information system (GIS), the Company maintains spatial and descriptive data for each sensitive site identified. As per the Company's operational controls, when unidentified sensitive sites are encountered during operational activities, operations are halted such that the circumstances can be assessed and the Company can make every effort to meet the special management conditions as defined in the OGRs.

Means of Achieving Target

This target will be achieved through adhering to Millar Western's OGRs.

Target Monitoring

As per the Company's operational controls, all incidents of non-conformance, with respect to environmental incidents, will be reported and tracked within the Company's Environmental Management System.

Reporting

In the Annual Reports and the Stewardship Report, Millar Western will identify the number of non-conformance incidents associated with sensitive sites, and will provide a summary of each. The summary will include the following information:

- Incident ID within the Company's ISOSoft database;
- Date, time and location of incident;
- General description of incident;
- General description of remedial measures (if applicable); and
- Resulting policy or procedural changes (if applicable).

Acceptable Variance

The acceptable variance is zero (0) non-conformance incidents.

Response

As per Millar Western's EMS, corrective actions will be undertaken immediately to address any incident of non-conformance. The Company will track incidents in the EMS and will undertake review of each incident to determine the cause and potential development of new, or modification of existing policies or procedures to reduce the likelihood of similar incidents occurring again.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Through the development of lower level plans (Final Harvest Plan and AOP) and the comprehensive consultation done with affected stakeholders, Company staff are able to identified and protect sensitive sites. Additionally, Millar Western will be negotiating FMA OGR's that will further outline the management of these sites.

VOIT 14 – Number of non-conformance incidents with Millar Western's OGRs or Code of Practice for Water Course Crossings, by FMU (1.1.2.3).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.1. Ecosystem diversity: Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.

Value: 1.1.2. Local/stand scale biodiversity.

Objective: 1.1.2.3. Maintain aquatic biodiversity by minimizing impacts of water crossings.

Rationale

Adherence to the FMA Operating Ground Rules and the Code of Practice for Water Course Crossings, ensures proper pre-work, installation, maintenance and removal of watercourse crossings, preserving aquatic biodiversity.

Current Status

In the 2005 Timber Year (May 1, 2005 – April 30, 2006), zero (0) incidents of non-conformance with the Operating Ground Rules were reported.

Target

Zero (0) annual incidents of non-conformance.

Target Supporting Information

Section C 4.0 of Millar Western's OGRs define the applicable legislation that the Company must adhere to when planning, constructing, maintaining and reclaiming watercourse crossings. In addition, the OGRs, contain guidelines for these phases that are consistent with the applicable legislation.

As per the Company's operational controls within their EMS, in the event of a non-conformance incident, operations are halted such that the circumstances can be assessed and the Company can make every effort to remedy or mitigate any negative impacts.

Means of Achieving Target

Millar Western will achieve this target through adhering to their OGRs, which incorporate the relevant operational considerations contained within the Code of Practice for Watercourse Crossings. As described in Company Commitment 12 in Section 3.2.5 - Research, Millar Western will be developing an operational risk rating system and accompanying assessment program to provide guidance in determining conditions in which forestry operations can be conducted in an environmentally sound manner.

Target Monitoring

As per the Company's EMS, all incidents of non-conformance, with respect to watercourse crossing incidents, will be reported and tracked within the Company's ISOSoft database.

Reporting

In the Annual Operating Plan (AOP), Millar Western will report the following:

- The number and type of watercourse crossings installed on all road types by conformance status.

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- The number of crossings by type, and the number of non-conformance incidents associated with watercourse crossings, and will provide a summary of each. The summary will include the following information:
    - Incident ID within the Company's ISOSoft database;
    - Date, time and location of incident;
    - General description of incident;
    - General description of remedial measures (if applicable); and
    - Resulting policy or procedural changes (if applicable).

Acceptable Variance

The acceptable variance is zero (0) non-conformance incidents.

Response

As per Millar Western's EMS, corrective actions will be undertaken immediately to address any incident of non-conformance. The Company will track incidents in the EMS and will undertake review of each incident to determine the cause and potential development of new, or modification of existing policies or procedures to reduce the likelihood of similar incidents occurring again.

Legal / Policy Requirements

This VOIT is a requirement of the Planning Standard.

Operational and Strategic Plan Linkages

The construction and installation of watercourse crossings is highly regulated by several different statutes. In particular, Millar Western has a comprehensive crossing design, layout and installation and reclamation guideline that recognizes the sensitively of these sites and the legislation governing this type of work. Millar Western will be negotiating OGRs, which in part, will direct the design, construction and reclamation of watercourse crossings.

VOIT 15 – Area of suitable habitat within each FMU for each biodiversity assessment species (1.2.1.1).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.2. Species diversity: Conserve species diversity by ensuring that habitats for the native species found in the DFA are maintained throughout time.

Value: 1.2.1. Viable populations of identified plant and animal.

Objective: 1.2.1.1. Maintain habitat for identified indicator species.

Rationale

Maintaining sufficient area of suitable habitat for a diverse group of carefully selected animal species serves as an indicator as to how well the landbase is able to meet the needs of the selected species and others over time. All species have different (albeit, sometime only slightly) habitat requirements, which align well with some, and conflict with others. As a result, there is no landscape state that can provide 100% suitability to 100% of the species living on it.

Current Status

The modeled current (2007) area, and proportion of area, of suitable habitat for the biodiversity assessment species is summarized in Table 14 and Table 15 for the W11 and W13 gross FMU areas respectfully.

The current values for each species represent those associated with the Habitat Supply Model (HSM) "All" where applicable, otherwise, they represent the values associated with the HSM with the lowest suitable habitat area value for each of the species in each FMU, at the beginning of the 2007 Timber Year.

Table 14. Current area of suitable habitat by species by HSM on the W11 gross FMU area.

Biodiversity Assessment Species			W11	
Common name	**Scientific name**	**HSM**	**(km²)**	**(%)**
American marten	Martes americana	All	1,624	92%
Barred owl	Strix varia	All	1,125	64%
Brown creeper	Certhia americana	All	628	36%
Canada lynx	Lynx canadensis	Cover	790	45%
Elk	Cervus elaphus	Cover - winter	1,363	77%
Least flycatcher	Empidonax minimus	Food	791	45%
Moose	Alces alces	Hiding	1,351	76%
Northern flying squirrel	Glaucomys sabrinus	All	1,608	91%
Northern goshawk	Accipiter gentilis atricapillus	All	1,717	97%
Pileated woodpecker	Dryocopus pileatus	All	1,760	100%
Ruffed grouse	Bonasa umbellus	All	1,498	85%
Snowshoe hare	Lepus americanus	Cover	1,331	75%
Southern red-backed vole	Clethrionomys gapperi	All	1,422	80%
Spruce grouse	Dendragapus canadensis franklinii	All	1,655	94%
Three-toed woodpecker	Picoides tridactylus	All	803	45%
Varied thrush	Ixoreus naevius	All	1,442	82%
Woodland caribou	Rangifer tarandus caribou	Cover - reproductive reqmt.	498	28%

Area presented represents portion of the Gross FMU (1,766 km²).

Table 15. Current area of suitable habitat by species by HSM on the W13 gross FMU area.

Biodiversity Assessment Species			W13	
Common name	**Scientific name**	**HSM**	**(km²)**	**(%)**
American marten	Martes americana	All	2,461	82%
Barred owl	Strix varia	All	2,260	75%
Brown creeper	Certhia americana	All	1,157	38%
Canada lynx	Lynx canadensis	Cover	1,616	54%
Elk	Cervus elaphus	Hiding - winter	2,230	74%
Least flycatcher	Empidonax minimus	Food	1,318	44%
Moose	Alces alces	Cover - severe winter	2,286	76%
Northern flying squirrel	Glaucomys sabrinus	All	2,911	96%
Northern goshawk	Accipiter gentilis atricapillus	All	2,721	90%
Pileated woodpecker	Dryocopus pileatus	All	2,936	97%
Ruffed grouse	Bonasa umbellus	All	2,760	91%
Snowshoe hare	Lepus americanus	Cover	2,658	88%
Southern red-backed vole	Clethrionomys gapperi	All	2,862	95%
Spruce grouse	Dendragapus canadensis franklinii	All	2,745	91%
Three-toed woodpecker	Picoides tridactylus	All	1,889	63%
Varied thrush	Ixoreus naevius	All	2,551	85%
Woodland caribou	Rangifer tarandus caribou	Cover - reproductive reqmt.	276	9%

Area presented represents portion of the Gross FMU (3,018 km²).

Target

At the start of the 2017 Timber Year, achieve the area, and proportion of area, of suitable habitat for the biodiversity assessment species defined in Table 16 and Table 17 for the W11 and W13 gross FMU areas respectfully.

The HSMs stated in the target are those that are identified in the Current Status section. The current values for each species represent those associated with the HSM "All" where applicable, otherwise, they represent the values associated with the HSM with the lowest suitable habitat area value for each of the species in each FMU.

Table 16. Target area of suitable habitat by species by HSM on the W11 gross FMU area.

Biodiversity Assessment Species			W11	
Common name	**Scientific name**	**HSM**	**(km^2)**	**(%)**
American marten	Martes americana	All	1,112	63%
Barred owl	Strix varia	All	407	23%
Brown creeper	Certhia americana	All	534	30%
Canada lynx	Lynx canadensis	Cover	854	48%
Elk	Cervus elaphus	Cover - winter	1,325	75%
Least flycatcher	Empidonax minimus	Food	753	43%
Moose	Alces alces	Hiding	1,359	77%
Northern flying squirrel	Glaucomys sabrinus	All	1,047	59%
Northern goshawk	Accipiter gentilis atricapillus	All	538	30%
Pileated woodpecker	Dryocopus pileatus	All	1,503	85%
Ruffed grouse	Bonasa umbellus	All	1,400	79%
Snowshoe hare	Lepus americanus	Cover	1,384	78%
Southern red-backed vole	Clethrionomys gapperi	All	1,105	63%
Spruce grouse	Dendragapus canadensis franklinii	All	1,630	92%
Three-toed woodpecker	Picoides tridactylus	All	620	35%
Varied thrush	Ixoreus naevius	All	1,325	75%
Woodland caribou	Rangifer tarandus caribou	Cover - reproductive reqmt.	498	28%

Area presented represents portion of the Gross FMU (1,766 km^2).

Table 17. Target area of suitable habitat by species by HSM on the W13 gross FMU area

Biodiversity Assessment Species		HSM	W11	
Common name	Scientific name		(km^2)	(%)
American marten	Martes americana	All	2,326	77%
Barred owl	Strix varia	All	911	30%
Brown creeper	Certhia americana	All	987	33%
Canada lynx	Lynx canadensis	Cover	1,590	53%
Elk	Cervus elaphus	Hiding - winter	2,220	74%
Least flycatcher	Empidonax minimus	Food	1,235	41%
Moose	Alces alces	Cover - severe winter	2,119	70%
Northern flying squirrel	Glaucomys sabrinus	All	1,881	62%
Northern goshawk	Accipiter gentilis atricapillus	All	1,124	37%
Pileated woodpecker	Dryocopus pileatus	All	2,867	95%
Ruffed grouse	Bonasa umbellus	All	2,775	92%
Snowshoe hare	Lepus americanus	Cover	2,673	89%
Southern red-backed vole	Clethrionomys gapperi	All	2,620	87%
Spruce grouse	Dendragapus canadensis franklinii	All	2,831	94%
Three-toed woodpecker	Picoides tridactylus	All	1,608	53%
Varied thrush	Ixoreus naevius	All	2,486	82%
Woodland caribou	Rangifer tarandus caribou	Cover - reproductive reqmt.	276	9%

Area presented represents portion of the Gross FMU (3,018 km^2).

Target Supporting Information

The species selection process was completed as part of the Biodiversity Assessment Project group's contribution to Millar Western's 1997 DFMP (refer *Appendix XIII - BAP Report #2: The Species Selection Procedure*). The current status and the targets presented within this VOIT were derived from BAP's Habitat Suitability Models (HSM) based on the July 2006 forest management scenario, which was ultimately replaced by the PFMS, representing the mountain pine beetle management strategies. As described in Company Commitment 11, Millar Western will assess the variation between the spatial harvest sequences to determine if there is a need to re-run the BAP analysis.

Means of Achieving Target

These targets are the output values from the BAP analysis under the PFMS. Millar Western and the other forestry operators will achieve these targets through successful implementation of the spatial harvest sequence (SHS) and adherence to the strategic and operational constraints incorporated into the forecasting process. Since these targets were identified through projecting the future state of the forest, based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence are likely to result in not achieving the targets. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Target Monitoring

This indicator will be monitored indirectly through monitoring the variance associated with adherence to the SHS. By April 30, 2008, Millar Western will develop the necessary processes and mechanisms to evaluate and report on the adherence to the SHS, and the actual harvest pattern's impact on the targets.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Summary of the adherence to the SHS.

In the 2017 – 2026 DFMP, Millar Western will report the following:

- Actual proportion of area that is suitable for each of the BAP species; and
- Variance between the target and the actual area of suitable habitat for each BAP species.

Within *Appendix XXV – VOIT BAP Reporting*, the Company has reported the following, as required in the Planning Standard:

- Table summarizing the projected area of suitable habitat for each biodiversity assessment species at years 0, 10, 50, 100 and 200 of the 200-year planning horizon; and
- Maps showing the projected distribution of suitable habitat for each biodiversity assessment species at years 0, 10, 50 of the 200-year planning horizon.

Acceptable Variance

At the end of year 10 of the 200-year planning horizon, the actual values are not less than 90% of the target area proportion for each species.

Response

If at the end of the end of the 10-year DFMP period, area of suitable habitat for a particular biodiversity assessment species is not within the acceptable variance, Millar Western will adjust the strategies in subsequent DFMPs.

Legal / Policy Requirement

This VOIT is a requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Compartment final harvest plans are developed consistent with the commitments defined in the DFMP, and the spatial harvest sequence developed as part of the PFMS within the DFMP. From

the compartment operating plans, an annual block harvest schedule is developed as part of the annual operating plan. The annual operating plan is submitted for review and approval by the Alberta government. This approval provides Millar Western the authority to harvest in accordance with the schedule defined in the plan. Harvesting under the authority of the AOP is completed in accordance with the operating ground rules (OGR) tied to the FMA. These OGRs are developed in concert with the DFMP development, or following the DFMP approval.

VOIT 16 – Number and area (ha) of in-situ genetic conservation areas (1.3.1.1).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.3. Genetic diversity: Conserve genetic diversity by maintaining the variation of genes within species.

Value: 1.3.1. Genetic integrity of natural tree populations.

Objective: 1.3.1.1. Retain "wild forests populations" for each tree species in each seed zone through establishment of in-situ reserves by the organization with an approved controlled parentage program in cooperation with the Alberta government.

Rationale

The Alberta government has undertaken a program to ensure that wild populations of trees retain their natural genetic diversity. The plan emphasizes in-situ (on site) conservation involving protecting wild tree populations in their natural habitats as well as ex-situ (off site) conservation to supplement the in-situ efforts

Currently, in Alberta, the only in-situ conservation areas are included in "protected areas" as follows:

- Federal Parks;
- Provincial Parks;
- Wilderness Parks;
- Wilderness Areas;
- Ecological Reserves;
- Natural Areas; and
- Provincially designated "special places"

Current Status

Zero (0) genetic conservation areas for each seed zone conforming with Section 20 of Standards for Tree Improvement in Alberta.

Target

Establish zero (0) genetic conservation areas for each seed zone conforming with Section 20 of Standards for Tree Improvement in Alberta.

Target Supporting Information

N/A

Means of Achieving Target

N/A

Target Monitoring

N/A

Reporting

In the Stewardship Report, Millar Western will report the following:

- The number in-situ conservation areas required in each seed zone, and the number established in the DFA. The Company will also include a map showing the location (s) of any existing in-situ conservation areas.

The Planning Standard requires DFMP reporting on the number and spatial location of genetic conservation areas required in each seed zone, and the number that exist. Since no genetic conservation areas are required nor exist in Millar Western's DFA, the Company has not reported on this VOIT in the DFMP.

Acceptable Variance

N/A

Response

N/A

Legal / Policy Requirement

This VOIT is requirement of The Timber Management Regulations 144.2.

Operational and Strategic Plan Linkages

N/A

VOIT 17 – Number of provenances and genetic lines in ex-situ gene banks and trials (1.3.1.2).

CCFM Criteria: 1. Biological diversity.

CSA SFM element: 1.3. Genetic diversity: Conserve genetic diversity by maintaining the variation of genes within species.

Value: 1.3.1. Genetic integrity of natural tree populations.

Objective: 1.3.1.2. Retain wild forests genetic resources through ex-situ conservation.

Rationale

Ex situ conservation generally entails storing representative samples of wild tree genes in seed banks and is particularly important for populations whose survival is threatened. Currently no such species have been identified on the DFA, however, Millar Western is committed to ongoing consultation and will work with the Alberta government if a need is identified for ex-situ conservation on the DFA.

Current Status

Zero (0) provenances and genetic lines in ex-situ gene banks and trials.

Target

Active ex-situ conservation program for all Controlled Parentage Program plan species in cooperation with the Alberta government.

Target Supporting Information

N/A

Means of Achieving Target

Adhere to the Standards for Tree Improvement in Alberta and participate in government and industry genetic cooperatives.

Target Monitoring

N/A

Reporting

In the Stewardship Report, Millar Western will report the following:

- The number of ex-situ conservation areas required in each seed zone and the number and spatial location of existing areas, in cooperation with the Alberta government.

Acceptable Variance

N/A

Response

N/A

Legal / Policy Requirement

This VOIT is requirement of The Timber Management Regulations 144.2.

Operational and Strategic Plan Linkages

N/A

VOIT 18 – Stakeholder consultation regarding protected areas as identified through government processes (1.4.1.1).

CCFM Criteria: 1. Biological diversity.
CSA SFM element: 1.4. Protected areas: Respect protected areas identified though government.
Value: 1.4.1. Areas with minimal human disturbance within managed landscape.
Objective: 1.4.1.1. Integrate transboundary values and objectives into forest management.

Rationale

Millar Western respects and recognizes the importance of protected areas on, or adjacent to, the DFA. Meaningful consultation with interested stakeholders is key to identifying the need for, the location of and the extent to which human disturbance can occur in protected areas.

Current Status

Millar Western's existing forest management planning process includes stakeholder consultation through several channels. The Plan Development Team (PDT), as defined in *Chapter 3 – Plan Development*, included public, government and industrial stakeholders, whose input to the plan influenced its development.

In support of the their stakeholder consultation initiatives, Millar Western uses its Communication Tracking Application to capture and report on the PDT meeting summaries as well as communication events from those not included on the PDT.

As part of the 2007 DFMP, Millar Western has developed the *DFMP/SFMP Implementation Communication Plan* (*Appendix V*). This plan describes the Company's commitment to stakeholder consultation and the various opportunities and initiatives that the Company will undertake.

Target

Maintain ongoing consultation with relevant protected areas agencies.

Target Supporting Information

Under Millar Western's FMA, the government is required to consult with Millar Western prior to the removal area from the FMA area.

Refer to *Appendix V – DFMP/SFMP Implementation Communication Plan*.

Means of Achieving Target

On an annual basis, Millar Western will contact the Alberta government's Whitecourt District office to determine if any new protected areas are being proposed for the DFA. The Company will also follow-up on any information that arises during the normal planning process.

Target Monitoring

Annually, Millar Western will contact the Alberta government to enquire if any new parks or protected areas are being proposed for the DFA. Millar Western will document and store all stakeholder communication events and stakeholder communication regarding existing or proposed protected areas within the Company's Woodlands Communication Database.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- Whether any new parks or protected areas are being proposed within or adjacent to the DFA, as confirmed by the Alberta government; and

- Summary of all consultation and outcomes related to proposed or existing parks and protected areas within or adjacent to the DFA.

Acceptable Variance

None.

Response

If the target is not met, Millar Western will adjust its strategies in subsequent FMPs.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Millar Western will respect the boundaries of all designated parks or protected areas within the DFA. Environmental operational controls in Millar Western's environmental management system are developed based on strategic planning commitments. Operational controls direct on the ground implementation of the strategic plan and allow for annual performance measurements.

2.2.2 Ecosystem Productivity

As described within the CSA Z809-02 standard, the VOITs associated with the CCFM SFM Criterion 2 (Maintenance and enhancement of forest ecosystem condition and productivity), are intended to "Conserve forest ecosystem condition and productivity by maintaining the health, vitality, and rates of biological production." (CSA 2002) Millar Western has included 10 VOITs under this criterion.

VOIT 19 – Annual percent of satisfactory regenerated surveys (establishment surveys and performance surveys) by company and FMU (2.1.1.1A).

CCFM Criteria: 2. Ecosystem productivity.

CSA SFM element: 2.1. Ecosystem resilience.

Value: 2.1.1. Reforested harvest areas.

Objective: 2.1.1.1. Meet reforestation targets on all harvest areas.

Rationale

Prompt and successful regeneration is required following harvesting operations to ensure long-term forest ecosystem resilience. Regeneration surveys are the Alberta government's approved assessment method for evaluating the success of regeneration efforts following harvest.

Current Status

During the 2005 Timber Year, Millar Western conducted Establishment surveys on 3,697 ha in FMU W13. The results of these surveys are summarized in Table 18. The high proportion of area in the NSR category is associated with the Virginia Hills fire treatment and salvage operations. Refer to VOIT 20 for additional information on the Virginia Hills fire.

Table 18. Millar Westerns 2005 Timber Year regeneration survey results for FMU W13.

	Establishment Surveys					Performance Surveys				
Timber	Surv Area	SR		NSR		Surv Area	FTG		SR	
Year	(ha)	(ha)	(%)	(ha)	(%)	(ha)	(ha)	(%)	(ha)	(%)
2005	3,697	3,301	89%	396	11%	0	N/A	N/A	N/A	N/A

SR - Satisfactorily regenerated

NSR - Not satisfactorily regenerated

FTG - Free-to-grow

Target

100 % of establishment surveys achieve Satisfactorily Regenerated (SR) status and 100 % of performance surveys achieve Free-to-grow (FTG) status.

Target Supporting Information

The Alberta government's "Regeneration Survey Manual" is the document that sets the standards for conifer (C), conifer leading mixedwoods (CD), deciduous (D) or deciduous leading mixedwoods (DC) in relation to the satisfactory regenerated status. The timing of establishment surveys is a function of the species composition of the block. For C, CD, and DC blocks establishment surveys must be carried out no sooner than 4 years and no later than 8 years following harvest. For D blocks establishment surveys must be carried out no sooner than 3 years and no later than 5 years following harvest.

The timing of performance surveys is also a function of species composition. A performance survey is completed 8 to 14 years after harvest in C, CD and DC cutblocks; and 10 to 14 years after harvesting in D blocks.

For specific information on regeneration performance standards for the province of Alberta a copy of the "Alberta Regeneration – Survey Manual" can be viewed online at *www.srd.gov.ab.ca/forests*.

Millar Western will complete regeneration surveys in accordance with the Alberta Regeneration Survey Manual that is in effect at the time of the survey, or with Alternative Regeneration Standards that Alberta government has approved for use on the DFA.

Millar Western and the other forestry operators experienced difficulties reporting DFA wide regeneration survey results. The DFA Silviculture Committee was formed to address this issue so that consistent DFA wide reporting can be completed. Commitment XX commits the Company to maintaining the DFA Silviculture Committee, and *Appendix XVII – Terms of Reference – DFA Silviculture Committee* defines this committee's membership and roles.

Means of Achieving Target

Millar Western will achieve this target through successful implementation of the Company's silviculture program.

Target Monitoring

Millar Western will monitor this target through completing establishment and performance surveys on harvested areas in accordance with the Forest Management Regulations and the Alberta Regeneration Survey Manual or with the Alberta government approved Alternative Regeneration Standards. Through the DFA Silviculture Committee, Millar Western and the other forestry operators will develop and implement the necessary processes and mechanisms to collect and compile the information such that reporting commitments can be met using complete datasets.

Reporting

By May 15 of each year, Millar Western will submit their Alberta Regeneration Information System (ARIS) reports to the Alberta government.

In the Annual Report, Millar Western will report the following:

- Summary, by FMU and forestry operator, the amount of area surveyed and the results of the surveys.

Acceptable Variance

The acceptable variance for a given Timber Year is 10 %.

Response

Where harvest areas are do not achieve satisfactory results, Millar Western will assess each area, and develop an action plan including potential treatments (i.e. fill planting, brushing, etc.), and re-survey schedule.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard, and is associated with the Forest Management Timber Regulation and the Alberta Regeneration Survey Manual.

Operational and Strategic Plan Linkages

The application of this VOIT is governed by a comprehensive group of government statues, directives and guidelines.

VOIT 20 – Cumulative percent of satisfactory regenerated surveys (establishment surveys and performance surveys) by company and FMU (2.1.1.1B).

CCFM Criteria: 2. Ecosystem productivity.

CSA SFM element: 2.1. Ecosystem resilience.

Value: 2.1.1. Reforested harvest areas.

Objective: 2.1.1.1. Meet reforestation targets on all harvest areas.

Rationale

Prompt and successful regeneration is required following harvesting operations to ensure long-term forest ecosystem resilience. Regeneration surveys are the Alberta government's approved assessment method for evaluating the success of regeneration efforts following harvest.

Current Status

Millar Western's Establishment survey results for the period 1997-2005 are summarized in Table 19.

Table 19. Millar Western cumulative (1997-2005) establishment survey results for FMU W13.

Harvest Block Group	Total Area Surveyed (ha)	Results by Area (ha)		% Success
		SR	NSR	
Normal Blocks	2,147	2,117	30	98.6%
Viginia Hills Fire salvage blocks	3,376	2,993	383	88.7%
Previously burned retreated Virginia Hills blocks	4,620	4,211	409	91.1%

SR - Satisfactorily regenerated

NSR - Not satisfactorily regenerated

Millar Western has achieved 98.6% success with establishment surveys in normal operations. Success rates have been lower within the Virginia Hills burn area.

Target

100 % of establishment surveys achieve Satisfactorily Regenerated (SR) status and 100 % of performance surveys achieve Free-to-grow (FTG) status.

Target Supporting Information

The Alberta government's "Regeneration Survey Manual" is the document that sets the standards for conifer (C), conifer leading mixedwoods (CD), deciduous (D) or deciduous leading mixedwoods (DC) in relation to the satisfactory regenerated status. The timing of establishment surveys is a function of the species composition of the block. For C, CD, and DC blocks establishment surveys must be carried out no sooner than 4 years and no later than 8 years

following harvest. For D blocks establishment surveys must be carried out no sooner than 3 years and no later than 5 years following harvest.

The timing of performance surveys is also a function of species composition. A performance survey is completed 8 to 14 years after harvest in C, CD and DC cutblocks; and 10 to 14 years after harvesting in D blocks.

For specific information on regeneration performance standards for the province of Alberta a copy of the "Alberta Regeneration – Survey Manual" can be viewed online at *www.srd.gov.ab.ca/forests*.

Millar Western will complete regeneration surveys in accordance with the Alberta Regeneration Survey Manual that is in effect at the time of the survey, or with Alternative Regeneration Standards that the Alberta government has approved for use on the DFA.

Millar Western and the other forestry operators experienced difficulties reporting DFA wide regeneration survey results. The DFA Silviculture Committee was formed to address this issue so that consistent DFA wide reporting can be completed. Commitment XX commits the Company to maintaining the DFA Silviculture Committee, and *Appendix XVII – Terms of Reference – DFA Silviculture Committee* defines this committee's membership and roles.

Means of Achieving Target

Millar Western will achieve this target through successful implementation of the Company's silviculture program. This target can be met even if one or more of the years contributing to the cumulative target are not met, as the cause(s) of the deficiency can be resolved in a subsequent contributing year.

Target Monitoring

Millar Western will monitor this target through completing establishment and performance surveys on harvested areas in accordance with the Forest Management Regulations and the Alberta Regeneration Survey Manual or with Alberta government approved Alternative Regeneration Standards. Through the DFA Silviculture Committee, Millar Western and the other forestry operators will develop and implement the necessary processes and mechanisms to collect and compile the information such that reporting commitments can be met using complete datasets.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Cumulative number of harvests blocks and areas in which regeneration surveys were conducted, by regeneration success, forestry operator and FMU.

Acceptable Variance

The acceptable variance is 10 %.

Response

Where harvest areas are do not achieve satisfactory results, Millar Western will assess each area, and develop an action plan including potential treatments (i.e. fill planting, brushing, etc.), and re-survey schedule.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard, and is associated with the Forest Management Timber Regulation and the Alberta Regeneration Survey Manual.

Operational and Strategic Plan Linkages

The application of this VOIT is governed by a comprehensive group of government statues, directives and guidelines.

VOIT 21 – Forestry Operator specific regenerated strata distribution percentage by subunit (2.1.1.1C).

CCFM Criteria: 2. Ecosystem productivity.
CSA SFM element: 2.1. Ecosystem resilience.
Value: 2.1.1. Reforested harvest areas.
Objective: 2.1.1.1. Meet reforestation targets on all harvest areas.

Rationale

A component of long-term forest sustainability is the appropriate balance of regenerated species. This indicator was developed to provide direction to operators and to ensure that each operator promptly meets their respective regeneration commitments so that the future species distribution identified in the PFMS is achieved. Operator specific targets were derived because operators have rights to different species and some operators harvest in only selected areas of the DFA. This indicator will be used to assess each operator's achievement under the rules outlined in the Planning Standard, Appendix A – Implementation of New Annual Allowable Cuts Standard.

Current Status

Not applicable. The regeneration targets have been developed for this plan and will be employed once the 2007 – 2016 detailed forest management plan is approved and implemented.

Target

At the start of the 2017 Timber Year, each operator to achieve their harvest area adjusted regenerated strata percent distribution.

Non-adjusted regenerated strata percent distribution are provided as initial targets (refer to Table 20 for W11 and Table 21 for W13) until replaced with actual harvested area adjusted targets as determined by the DFA Silviculture Committee (refer to *Appendix XVII – Terms of Reference – DFA Silviculture Committee*).

Table 20. W11 target (2017) regenerated strata area and proportion by forestry operator.

Regenerated Strata	Company Specific Regeneration Targets								Total	
	OK Lumber		Spruceland		Ft. Assiniboine		Millar Western			
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)
AW	-	0%	-	0%	-	0%	6,640	100%	6,640	57%
AP	22	2%	77	2%	7	2%	-	0%	106	1%
AS	197	18%	682	18%	59	18%	-	0%	938	8%
PA	61	6%	209	6%	18	6%	-	0%	288	2%
SA	182	17%	629	17%	54	17%	-	0%	865	7%
PL	240	22%	830	22%	71	22%	-	0%	1,142	10%
SW	367	34%	1,267	34%	109	34%	-	0%	1,743	15%
Total	1,070	100%	3,694	100%	318	100%	6,640	100%	11,722	100%

The regeneration targets in this table are determined using the "back-to-itself" strategy. Although the regenerated strata totals and the individual operator totals are accurate, the proportion that each operator will harvest (and regenerate) will differ once the DFMP has been implemented.

Table 21. W13 target (2017) regenerated strata area and proportion by forestry operator.

Regenerated Strata	Company Specific Regeneration Targets						Total	
	MTU		Weyerhaeuser		Millar Western			
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)
AW	-	0%	4,236	100%	-	0%	4,236	17%
AP	71	5%	-	0%	949	5%	1,019	4%
AS	13	1%	-	0%	173	1%	186	1%
PA	90	6%	-	0%	1,212	6%	1,302	5%
SA	88	6%	-	0%	1,180	6%	1,267	5%
PL	591	41%	-	0%	7,935	39%	8,526	34%
SB	144	10%	-	0%	1,941	10%	2,085	8%
SW	439	31%	-	0%	5,890	29%	6,329	25%
Total	1,435	100%	4,236	100%	20,245	100%	24,951	100%

Target Supporting Information

With multiple operators harvesting fiber from the DFA a need to clearly identify regeneration responsibilities became apparent. The operator specific regeneration targets provide direction to operators to ensure sustainable yields are harvested and promptly regenerated on the DFA. Each operator is responsible to meet only their operator specific target.

Initial targets based on conifer or deciduous landbase, quota percentages and regenerated areas directly from the forecasting were used to derive the above tables. However, the actual harvest profile will be different and will vary between years. In addition, strata distributions are not equal between compartments. To address these issues, Millar Western created the DFA Silviculture Committee, which meets at least annually to ensure that each operator understands their DFMP regeneration commitments and the impacts from the strata actually harvested (refer to *Appendix XVII – Terms of Reference – DFA Silviculture Committee*).

These tables were derived directly from the forecasted Spatial Harvest Sequence and they account for strata conversion modeled in the W13 forecasting. W11 forecasting did not contain strata conversion.

Means of Achieving Target

Millar Western and the quota holders will achieve this target through successful implementation of their Company's silviculture program. To be successful, each block requires the assignment of a species strata regeneration target. Species strata to be assigned to meet operator specific regeneration target distribution adjusted for actual harvest. Since these targets were identified based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence will result in the targets changing due to the strata actually harvested. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Target Monitoring

Millar Western will monitor this target through annual updates of company specific targets and declarations as reported by the DFS Silviculture Committee.

Through the DFA Silviculture Committee, Millar Western will develop and implement the necessary processes and mechanisms to collect and compile the information such that reporting commitments can be met using complete datasets.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- Regenerated area and percent by strata, forestry operator and FMU.

In the 2017 Detailed Forest Management Plan, Millar Western will report the following:

- Regenerated area and percent by strata, forestry operator and FMU.
- Variance between target and actual area and percent regenerated strata by forestry operator and FMU.

Acceptable Variance

The acceptable variance is +/-5% by strata.

Response

Annually, Millar Western and the other forestry operators will assess the adherence to the targets and will adjust accordingly to achieve the targets defined for the start of the 2017 Timber Year.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard, and is associated with the Forest Management Timber Regulation and the Alberta Regeneration Survey Manual.

Operational and Strategic Plan Linkages

The company specific regeneration targets are defined and incorporated into the DFMP. Through the DFA Silviculture Committee, these targets will be incorporated into the operational regeneration plans, involving coordination with the annual operating plan.

VOIT 22 – Percent of change in managed landbase area (2.1.2.1).

CCFM Criteria: 2. Ecosystem productivity.

CSA SFM element: 2.1. Ecosystem resilience.

Value: 2.1.2. Maintenance of forest landbase.

Objective: 2.1.2.1. Limit conversion of forest landbase to other uses.

Rationale

Industrial activities on a forested landscape have the potential to reduce the productivity of the forest. Some activities that have the ability to alter the productive landbase are access development, oil & gas exploration, pipeline construction, well site development, and coal bed methane development.

Current Status

The current area of managed landbase for W11 is 87,369 ha and for W13 is 206,415 ha (total DFA managed landbase area is 293,784 ha). These areas represent the managed landbase area used in the timber supply analysis.

Target

At the start of the 2017 Timber Year, < = 2.5% of managed landbase converted to non-timber production uses by FMU.

Target Supporting Information

The government of Alberta is the authority responsible for granting approval of withdrawals from landbase, which often result in long-term or permanent forest landbase loss. As the FMA holder, Millar Western's consent is required to release the land from the area defined within the FMA, but this consent is expected from the FMA holder once the Alberta government has forwarded the request to the FMA holder.

Means of Achieving Target

Although it is impossible for Millar Western to completely influence the successful achievement of this target, the Company will continue to work with the Alberta government and other stakeholders on initiatives to reduce the amount of productive land removed from the DFA. These initiatives include, but are not limited to the following:

- Participate in government consultation regarding "Integrated Land Management" initiatives.
- Work with other users to develop common road access options

- In addition to limiting the amount of forest land converted to non-forest land, Millar Western will investigate initiatives that will re-introduce forestland into the DFA for consideration and inclusion in the next timber supply analysis

Target Monitoring

Millar Western will continue to monitor the amount of forested landbase converted to other uses through their Lands Disposition Management (LDM) application and through regular inventory updates.

Reporting

In the Annual Report, Millar Western will report the following:

- The number of dispositions and the area of those dispositions withdrawn from the managed landbase of the DFA.

- The number of dispositions and the area of those dispositions returned to the managed landbase of the DFA.

The results will be based on the Alberta government prescribed year of July 23 to July 22.

Acceptable Variance

Since Millar Western has little influence on the actual amount of the FMA that is withdrawn, the Company does not assign an acceptable variance around the target.

Response

Regardless of the area of the DFA converted to non-forested land, Millar Western will complete the landbase classification process in preparation for the next management plan.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Lands withdrawn from the DFA are removed from the productive landbase when determining sustainable harvest levels.

VOIT 23 – Area affected by insects, disease or natural calamities as reported by the Alberta government and Millar Western (2.1.2.2).

CCFM Criteria: 2. Ecosystem productivity.
CSA SFM element: 2.1. Ecosystem resilience.
Value: 2.1.2. Maintenance of forest landbase.
Objective: 2.1.2.2. Recognize lands affected by insects, disease or natural calamities.

Rationale

The occurrence of insect, disease and natural calamites are often difficult to detect, and can result in significant damage or death to forests of all ages and stages of succession. A coordinated effort to detect and assemble information of these occurrences provides opportunities to mitigate negative impacts through strategic and operational planning.

Current Status

In the fall of 2006, Mountain Pine Beetle (MPB) was discovered in the western portion of the DFA. Currently, there appears to be only a minor presence of the beetle, but Millar Western expects the infestation to increase significantly in the coming years, based on recent MPB surveys and MPB behavior.

Target

Report all identified areas where insect, disease or natural calamity affect an area >= 10 ha on the DFA.

Target Supporting Information

Both Millar Western and the Alberta government are responsible for detection, monitoring and assessment of insect, disease and natural calamities. To date, reporting of areas affected by insect, disease and natural calamities have been limited to very large infestations, or those associated with high profile agents (ie. MPB).

Annually, the Alberta government produces a forest health report that identifies the significant insect, disease and natural calamities that have occurred in the previous calendar year.

Means of Achieving Target

Millar Western will achieve this target though annually requesting current forest health survey information, including spatial data, from the Alberta government, and through complying with the Company's procedures for identifying and reporting on suspected forest health issues as they are encountered in the field. In specific, the Company has developed a standard operating procedure, and implemented a training program for identifying and reporting MPB. The

Company's monitoring efforts will be closely coordinated with the local Alberta government office.

Target Monitoring

Within Millar Western's geographic information system, Millar Western will continue to track significant insect, disease and natural calamity data as provided by the Alberta government, or otherwise collected by Millar Western..

Reporting

As significant occurrences of insect, disease or other natural calamities are discovered by Millar Western, they will be reported to the Alberta government as soon as reasonably possible.

In the Annual Reports and the Stewardship Report, Millar Western will report the following:

- The total area known to be affected by insect, disease and natural calamites, type, where individual occurrences are >= 10 ha in size. Smaller areas of occurrence will be reported where information is available.

Acceptable Variance

There is no level of acceptable variance associated with this VOIT. The actual values are those reported.

Response

N/A

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard, with linkages to the Alberta Forest Health Strategy and Shared Roles and Responsibilities.

Operational and Strategic Plan Linkages

The reporting and tracking of areas affected by insects, diseases and natural calamities will serve as an input for strategic and operational planning. Final compartment harvest plans and annual operating plans will incorporate this information and potentially design, adjust and/or schedule harvest areas to minimize impacts or salvage affected areas.

VOIT 24 – Percent of Rank 1 and Rank 2 mountain pine beetle susceptible stand area harvested (2.1.2.3A).

CCFM Criteria: 2. Ecosystem productivity.

CSA SFM element: 2.1. Ecosystem resilience.

Value: 2.1.2. Maintenance of forest landbase.

Objective: 2.1.2.3. Reduce the susceptibility of forest stands to mountain pine beetle.

Rationale

Concerted efforts to reduce the area most susceptible to mountain pine beetle (MPB) infestation through harvesting will capture the mortality that would otherwise be experienced. Although a natural event, a significant MPB infestation could have serious economic and social impacts, such as those seen within British Columbia during the province-wide infestation seen since the mid 1990s to present.

Current Status

In the fall of 2006, MPB was discovered in the western portion of the DFA. Currently, there appears to be only a minor presence of the beetle, but Millar Western expects the infestation to increase significantly in the coming years.

Using the Alberta government's MPB susceptibility ranking model, Millar Western and the Alberta government have determined the proportion of the managed landbase contained within each of the MPB Ranking (refer to Table 22).

Table 22. Current (2007) area and proportion of managed landbase within the Rank 1 and Rank 2 MPB rating classes

	Rank 1		Rank 2		Managed Landbase	
FMU	(ha)	(%)	(ha)	(%)	(ha)	(%)
W11	0	0%	21,006	24%	87,368	100%
W13	3,376	2%	82,184	40%	206,415	100%
Total	3,376	1%	103,190	35%	293,783	100%

The Alberta government's MPB ranking system is static and for this DFMP, based on the condition of the forest in 2007. Millar Western developed a dynamic MPB risk to incorporate into the forecasting. Refer to *Chapter 5 – Forecasting and the Preferred Forest Management Scenario* for more information.

Target

By the start of the 2017 Timber Year, harvest a total of 2,504 ha (12%) in W11 and 15,477 ha (18%) in W13 of the 2007 Rank 1 and Rank 2 MPB rating class area.

Target Supporting Information

Note that the reason that the target numbers are not higher is because the majority of the area that is classed in the Rank 1 and Rank 2 MPB rating contains stands that are below the minimum operability standards.

In reality, all pine stands are susceptible to MPB infestation, however for the purposes of prioritization, stand susceptibility rankings have been determined as per the Alberta government's Interpretive Bulletin – Planning MPB Response Operations, Version 2.6. According to this document, these stands are characterized as follows:

- Rank 1 stands are the highest priority for susceptibility reduction. These stands provide the best habitat for MPB to produce brood and spread MPB to other stands. Rank 1 stands have the following general characteristics, comprised of large old pine, are close to existing MPB populations and/or are in areas that are very climatically suitable for beetle development.

- Rank 2 stands are also important, but, because of their lower pine component, lower climate suitability, and/or greater distance from existing MPB populations, they are a lower priority.

- Rank 3 stands can be attacked and MPB can survive in these stands. However, the brood produced from these areas, at least right now, is significantly lower than that of Rank 1 and Rank 2 stands.

- Stands with no rank, are not susceptible to MPB attack.

The Alberta government's MPB ranking was derived using their GIS application which uses AVI attributes and other datasets. It could not be directly incorporated into the DFMP forecasting and thus changes in future ranking due to changes in stand growth and harvesting were not predicted. This MPB ranking determined in the future will be higher in W13 due to the large immature area in the Windfall burn maturing. Refer to *Chapter 5 – Forecasting and the Preferred Forest Management Scenario* for more information in this subject.

Means of Achieving Target

Millar Western will achieve this target through adhering to the SHS, which the Company developed using the MPB SSI results as one of the considerations for harvest sequencing.

Adherence to the SHS will depend on the actual movement of any MPB infestation. Millar Western is committed to acting swiftly to harvest infested stands, which will take priority over those identified as susceptible. This potential deviation to the SHS may impact the ability to meet this target, as well as other targets and predicted outcomes associated with other aspects included in the plan development (i.e. FORWARD runoff coefficients, BAP special habitat elements, etc.).

Target Monitoring

Working with the Alberta government, Millar Western will track identified areas of MPB infestation spatially in their GIS. This spatial layer will be updated annually or more frequently depending on the dynamics of the infestation(s). Following the cutover updates, the harvest area and MPB infestation layer will be overlaid to determine the area of identified MPB infestation harvested. In addition to the Alberta government's surveys, Millar Western will have staff and contractors monitoring for MPB, as defined in the Environmental Management System.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- Annual and cumulative area harvested, and the percent of harvest area in Rank 1 and Rank 2 stands on the managed landbase.

- Variance between the actual percent of harvest area within Rank 1 and Rank 2 stands, and the stated target on the managed landbase.

Acceptable Variance

The acceptable variance around this target is +/- 10% at the end of the 10-year DFMP period.

Response

Millar Western will evaluate the cumulative percent on an annual basis and will consider revising harvest sequence where feasible.

Legal / Policy Requirement

This VOIT is in compliance with the Alberta government's Interpretive Bulletin: Planning MPB Response Operations, Sept 2006, and will be updated periodically, as required.

Operational and Strategic Plan Linkages

This target is directly linked to the 2007 DFMP through the forecasting and the SHS. The SHS for the first 10-year period includes the Rank 1 and Rank 2 MPB susceptible stands for harvest. Existing final compartment harvest plans, will be amended to reflect the prioritization of these areas, which will be reflected within the Annual Operating Plan.

VOIT 25 – Percent of identified MPB infested stand area harvested (2.1.2.3B).

CCFM Criteria: 2. Ecosystem productivity.

CSA SFM element: 2.1. Ecosystem resilience.

Value: 2.1.2. Maintenance of forest landbase.

Objective: 2.1.2.3. Reduce the susceptibility of forest stands to mountain pine beetle.

Rationale

Harvesting MPB affected trees serves two purposes. 1 – Removal and prompt processing of trees that have MPB larvae within, removes and kills the insects, thereby eliminating the risk of further infestation or reproduction of the beetles in the harvested tree boles. 2 – Removal and prompt processing of the trees that are currently being, or have been, attacked minimizes the amount of timber volume negatively impacted by the beetle. These negative impacts include drying of the timber and spread of blue-stain fungus, which significantly impact the quality and/or value of both solid wood and pulp products.

Current Status

In the fall of 2006, Mountain Pine Beetle was discovered in the western portion of the DFA.

The Alberta government conducted Level I treatment (single-tree) removal/destruction of the infested trees on the DFA during the 2006 timber year.

Target

Harvest 100% of the area identified as having "green" and "fall-red" MPB attacked trees, where economically feasible, on the managed landbase, or where authorized by the Alberta government.

Target Supporting Information

As defined in the Alberta government's Interpretive Bulletin: Planning Mountain Pine Beetle Response Operations, Version 2.6, September 2006, the government will authorize two types of treatments for controlling current infestations. Level I treatments are executed by the Alberta government and focus on removal of individual infested trees, whereas Level II treatments are executed by Industry and focus on the removal of infested stands of trees.

Millar Western will plan aggressive action to harvest recently infested MPB stands, with the priority being to harvest the green trees and avoiding the salvage of dead trees. This approach is based on the negative economical consequences of processing badly checked and/or stained logs.

Means of Achieving Target

Millar Western will work with the Alberta government to ensure that timely approval of harvest operations associated with identified MPB infested stands is achieved and that flexibility in the spatial harvest sequence is exercised as required.

Target Monitoring

Working with the Alberta government, Millar Western will track identified areas of MPB infestation spatially in their GIS. This spatial layer will be updated annually or more frequently depending on the dynamics of the infestation(s). Following the cutover updates, the harvest area and MPB infestation layer will be overlaid to determine the area of identified MPB infestation harvested. In addition to the Alberta government's surveys, Millar Western will have staff and contractors monitoring for MPB, as defined in the Environmental Management System.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- Annual and cumulative area of the managed and gross landbase that have been identified as being infested with MPB, and the total area and % area that have been harvested.

Acceptable Variance

The acceptable variance for this target is 50 % of the area in the Managed Landbase at the end of the 10-year DFMP period.

Response

On an annual basis, Millar Western will assess the achievement of this target and work with the Alberta government to adjust the Spatial Harvest Sequence to include a greater amount of the identified MPB infested area.

Legal / Policy Requirement

This VOIT is in compliance with the Alberta government's Interpretive Bulletin: Planning MPB Response Operations, Sept 2006, and will be updated periodically, as required.

Operational and Strategic Plan Linkages

Due to the reactive nature associated with this indicator and target, the plan linkages will be in the form of amendments to the Spatial Harvest Sequence, final compartment harvest plans and the annual operating plans.

VOIT 26 – Area of pure pine and mixedwood pine stands by 'mature' and 'old' seral stage (2.1.2.4).

CCFM Criteria: 2. Ecosystem productivity.

CSA SFM element: 2.1. Ecosystem resilience.

Value: 2.1.2. Maintenance of forest landbase.

Objective: 2.1.2.4. Alter the current pine age structure of the forest to reduce long-term MPB susceptibility.

Rationale

Reducing the mature and old pure pine and pine mixedwood stand area is a long-term objective that will reduce the amount of area potentially susceptible to mountain pine beetle (MPB) infestation and probable loss.

Current Status

The current (2007) area of pure pine and mixedwood pine stands in the mature and old seral stages are summarized in Table 23.

Refer to the Seral Stages components of the Supplemental Information section for background information on seral stage definition and classification.

Table 23. Current (2007) area of pure and mixedwood pine stands in mature and old seral stages on the managed landbase.

Pure / Mixedwood Pine Class	Species Strata	W11		W13	
		Mature	Old	Mature	Old
Mixedwood pine	AP	821	14	2,832	50
	PA	807	0	2,793	55
	Total	1,628	14	5,625	105
Pure pine	PL	5,611	57	8,486	2,132
	Total	5,611	57	8,486	2,132
Grand Total		7,239	71	14,111	2,237

Target

At the start of the 2017 Timber Year, achieve the area of pure pine and mixedwood pine stands in the mature and old seral stages as summarized in Table 24.

Refer to the Seral Stages components of the Supplemental Information section for background information on seral stage definition and classification.

Table 24. Target (2017) area of pure and mixedwood pine stands in mature and old seral stages on the managed landbase.

Pure / Mixedwood Pine Class	Species Strata	W11		W13	
		Mature	Old	Mature	Old
Mixedwood pine	AP	659	71	2,183	123
	PA	700	0	1,947	86
	Total	1,359	71	4,130	209
Pure pine	PL	4,758	135	5,492	1,201
	Total	4,758	135	5,492	1,201
Grand Total		6,117	206	9,622	1,410

Target Supporting Information

Indicator was derived as a measure of success in achieving the Alberta government's healthy pine forest strategy of reducing amount the older age pine stands susceptible to mountain pine beetle infestation. Refer to the PFMS section of *Chapter 5 – Forecasting and the Preferred Forest Management Scenario* for more information.

Means of Achieving Target

These targets are the output values from the forecasting process under the PFMS. Millar Western and the other forestry operators will achieve these targets through successful implementation of the spatial harvest sequence (SHS) and adherence to the strategic and operational constraints incorporated into the forecasting process. Since these targets were identified through projecting the future state of the forest, based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence are likely to result in not achieving the targets. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Target Monitoring

These targets will be monitored through annually assessing Millar Western and the other forestry operators' adherence to the SHS on the DFA. The Company's completion of annual DFA inventory updates of harvesting and other unnatural disturbances and natural disturbances will provide the means to complete this assessment.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Summary of the amount of pure pine and mixedwood pine stands in the mature and old seral stages.

Acceptable Variance

At the end of the 10-year DFMP period, target area is achieved within +/- 20%.

Response

Where target variances don't achieve that defined above, strategies will be adjusted in subsequent DFMPs.

Legal / Policy Requirement

This VOIT is associated with Section 7 of the Alberta government's Interpretive Bulletin – Planning Mountain Pine Beetle Response Operations, Version 2.6, September 2006 (Alberta 2006).

Operational and Strategic Plan Linkage

Compartment final harvest plans are developed consistent with the commitments defined in the DFMP, and the spatial harvest sequence developed as part of the PFMS within the DFMP. From the compartment operating plans, an annual block harvest schedule is developed as part of the annual operating plan. The annual operating plan is submitted for review and approval by the Alberta government. This approval provides Millar Western the authority to harvest in accordance with the schedule defined in the plan. Harvesting under the authority of the AOP is completed in accordance with the operating ground rules (OGR) tied to the FMA. These OGRs are developed in concert with the DFMP development, or following the DFMP approval.

VOIT 27 – Existence and implementation of a noxious weed program (2.1.3.1).

CCFM Criteria: 2. Ecosystem productivity.

CSA SFM element: 2.1. Ecosystem resilience.

Value: 2.1.3. Control invasive species.

Objective: 2.1.3.1. Control non-native plant species (weeds).

Rationale

Forest Management Agreement holders are required to implement and adhere to a noxious weed program. Although noxious weeds are not a significant problem to the forest industry, such programs reduce the establishment and/or spread of restricted weeds into agricultural and cattle grazing areas.

Current Status

As part of Millar Western's Environmental Management System, Noxious Weeds have been identified as a significant aspect, requiring operational controls to manage their impact. Millar Western has two controls in place to manage the impact of weeds they are:

- Annual training of forestry staff and contractors working on the DFA in the identification of common invasive weeds and means to minimize their spread.

- Inspections of all active LOCs and dispositions to identify any invasive weed problems. Once identified, weed problems need to be corrected within an appropriate timeframe.

Target

Continue to maintain existing Noxious Weed Program, and revise where necessary following annual review.

Target Supporting Information

The "Weed Control Act" is the Provincial legislation for weed control in Alberta. The purpose of the Act is to eliminate existing invasive plant infestations and limit the introduction and spread of invasive plants throughout the province. Restricted, noxious and nuisance weeds are aggressive, difficult to manage, and invasive plant species. These weeds may displace or significantly alter native plant communities and may also cause economic damage to private and public lands.

Restricted weeds are usually found in very few regions of Alberta and usually low populations are present at any one location. They are designated Restricted to prevent their establishment. Where found, "destruction" of the restricted weeds is required. Noxious weeds are already established in many regions in the province. "Control" of noxious weeds is required where they are identified as problematic. "Destruction" and "control" are defined in the Act. Nuisance

weeds are common species that can be found throughout the Province, and as such are very difficult to eliminate. They can cause significant economic losses, but are so biologically suited to Alberta that they cannot be eradicated.

Means of Achieving Target

Millar Western will achieve this target through annual reviews of their existing Noxious Weed Program to determine if modifications to the program or the Company's practices are required.

Target Monitoring

Millar Western's Noxious Weed Program is already implemented; the program is reviewed on an annual basis to assess the success and potential needs for improvement.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Summary of the results of all noxious weed inspections that are conducted as part of the Company's noxious weed program. The Company will also describe any significant changes to the program.

Acceptable Variance

No acceptable variance is associated with this VOIT.

Response

Millar Western will adjust its noxious weed program if deficiencies are encountered.

Legal / Policy Requirement

This VOIT is a requirement of The Weed Act and the Alberta government's Directive 2001-06, Weed Management in Forestry Operations, May 24, 2001.

Operational and Strategic Plan Linkages

Operational controls in Millar Western's environmental management system are developed based on strategic planning commitments. Operational controls direct on the ground implementation of the strategic plan and allow for annual performance measurements.

VOIT 28 – Existence of programs to select and monitor amphibian and soil micro-organism indicator species (2.2.1.1).

CCFM Criteria: 2. Ecosystem productivity.
CSA SFM element: 2.1. Ecosystem resilience.
Value: 2.2.1. Forest health.
Objective: 2.2.1.1. Maintain forest health.

Rationale

Under the FORWARD II project, the FORWARD group is developing a process to incorporate hydrologic elements into the forecast and planning tools currently used by the forest industry. This will be accomplished using hybrid modeling techniques supported by the collection of field data on weather, soils, soil microbial communities, groundwater, wetlands, vegetation, riparian and aquatic bio-indicators, stream flow and water quality from first- through fourth-order watersheds. The results of this project will allow Millar Western's planning team to determine acceptable harvest levels using protocols that balance land disturbance with water quality and quantity. This project will also link wetlands and riparian vegetation connectivity and integrity into the planning process, recognizing the importance these watershed features play in moderating losses and maintaining the flora and fauna associated with these sites.

The SOFA project will help to assess the impacts that forest harvesting have on amphibian populations and increase the knowledge base of amphibian ecology in Alberta. It will also provide long-term data that can be used by forest managers to ensure that amphibian populations are not being adversely affected by forestry operations.

The soil micro-organism study will quantify the effects of various watershed disturbance patterns on soil microbial communities, their transformations of nitrogen and phosphorus and subsequent nutrient availability and transport. This will be accomplished using a chronosequence approach, whereby microbial communities are assessed in cutblocks of differing ages, in order to model post-harvest microbial community changes over time. This will allow forest managers to better understand the impacts of forest harvesting on microbial communities as they pertain to nutrient availability and transport.

Current Status

Under the FORWARD II project, the SOFA and Soil Micro-organism Study have been initiated.

Target

Continue Company support and participation in the SOFA and Soil Micro-organism Study, and incorporate findings where applicable.

Target Supporting Information

N/A

Means of Achieving Target

Millar Western will commit resources and time to the FORWARD II project, and specifically the SOFA and Soil Micro-organism Study.

Target Monitoring

Millar Western will monitor this target through participating in the FORWARD group's meetings, and through actively coordinating the field work associated with the projects.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Summary of the progress of and findings associated with these projects, and where the findings have been incorporated into operational and strategic planning, when applicable.

Acceptable Variance

There is no acceptable variance associated with this target.

Response

If the target is not met, Millar Western will provide justification and will re-define the targets and their associated timelines.

Legal / Policy Requirement

N/A

Operational and Strategic Plan Linkages

The findings and recommendations from the FORWARD II project (including the SOFA and Soil Micro-organism Study), will be incorporated into strategic and operational forest management activities.

2.2.3 Soil and Water Quality

As described within the CSA Z809-02 standard, the VOITs associated with the CCFM SFM Criterion 3 (Conservation of soil and water resources), are intended to "Conserve soil and water resources by maintaining their quantity and quality in forest ecosystems." (CSA 2002) Millar Western has included six VOITs under this criterion.

VOIT 29 – Number of incidents of non-conformance with respect to bared area (roads and landings) within harvest areas (3.1.1.1).

CCFM Criteria: 3. Soil and water quality.
CSA SFM element: 3.1. Soil quantity and quality.
Value: 3.1.1. Soil productivity.
Objective: 3.1.1.1. Minimize impact of roading and bared areas in forest operations.

Rationale

Adherence to the FMA Operating Ground Rules and Forest Soils Conservation Task Force Report (AFPA/ALFD 1996), ensures proper management to preserve soil productivity. Specifically, maximum bared area proportion targets limit the amount of area in which soil productivity can be affected through bared harvest area.

Current Status

In the 2005 Timber Year (May 1, 2005 – April 30, 2006), zero (0) incidents of non-conformance with respect to bared areas within harvest areas, as described in the OGRs, were reported.

Target

Zero (0) annual incidents of non-conformance.

Target Supporting Information

As per the OGRs and the Forest Soil Conservation Guidelines, the total bared area within harvest areas must be < 5% of the total harvest area. This proportion can be increased with the Alberta government's prior approval.

Means of Achieving Target

Millar Western will achieve this target though adhering to the FMA OGRs and the Forest Soils Conservation Task Force Report (AFPA/ALFD 1996). In support of these standards, the Company utilizes two approaches to ensure compliance:

1) Pre-harvest, bared area percentage is calculated and reviewed during harvest pre-works. If bared are >= 5% confirmation of measurements, operational requirements and sensitive sites are reviewed; and

2) Post harvest, operations inspections are conducted to determine if any further soil disturbance has occurred (i.e. rutting must be < 2% of harvest area).

Non-conformances are reported as per the requirements of the Company's Environmental Management System.

Target Monitoring

Millar Western will develop and implement a process that will assess the pre-and post –harvest bared areas of harvest areas.

Incidents of soil erosion or slumping are monitored on an ongoing basis through formal or informal field inspections and audits completed by Millar Western, the Alberta government or jointly. As per the Company's EMS, all incidents of non-conformance associated with environmental incidents will be reported and tracked within the Company's ISOSoft database.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- The number of non-conformance incidents associated with bared areas, and will provide a summary of each. The summary will include the following information:
    - Incident ID within the Company's ISOSoft database;
    - Date, time and location of incident;
    - General description of incident;
    - General description of remedial measures (if applicable); and
    - Resulting policy or procedural changes (if applicable).

Acceptable Variance

The acceptable variance is zero (0) non-conformance incidents.

Response

As per Millar Western's EMS, corrective actions will be undertaken immediately to address any incident of non-conformance. The Company will track incidents in the EMS and will undertake review of each incident to determine the cause and potential development of new, or modification of existing policies or procedures to reduce the likelihood of similar incidents occurring again.

Legal / Policy Requirement

This VOIT is a requirement of the Planning Standard and is associated with the Company's OGRs and the Forest Soils Conservation Task Force Report (1996).

Operational and Strategic Plan Linkages

Operational controls in Millar Western's environmental management system are developed based on strategic planning commitments. Operational controls direct on the ground implementation of the strategic plan and allow for annual performance measurements.

VOIT 30 – Number of incidents of non-conformance with respect to reportable soil erosion and slumping (3.1.1.2).

CCFM Criteria: 3. Soil and water quality.
CSA SFM element: 3.1. Soil quantity and quality.
Value: 3.1.1. Soil productivity.
Objective: 3.1.1.2. Minimize Incidence of soil erosion and slumping.

Rationale

Adherence to the FMA Operating Ground Rules and Forest Soils Conservation Task Force Report (AFPA/ALFD 1996), ensures proper management to preserve soil productivity. Soil erosion and slumping can occur naturally, but their occurrences and severity can be minimized through adhering to these standards and guidelines.

Current Status

In the 2005 Timber Year (May 1, 2005 – April 30, 2006), zero (0) incidents of non-conformance with respect to soil erosion and slumping, as described in the OGRs, were reported on the DFA.

Target

Zero (0) annual incidents of non-conformance.

Target Supporting Information

For clarity, erosion and slumping are described below, along with what constitutes as reportable incident:

Slumping (mass wasting) happens on steep hillsides, occurring along distinct fracture zones, often within materials like clay, that, once released, may move quite rapidly downhill. They often will show a spoon-shaped depression within which the material has begun to slide downhill. In some cases the slump is caused by water beneath the slope weakening it. In many cases it is simply the result of poor engineering along highways where it is a regular occurrence. A reportable slumping event is that which measures a minimum of 20 X 20 metres in size or has a negative impact on the environment.

Erosion is the wearing away of the land surface by running water, wind, ice, or other geological agents. A reportable erosion event are those that have a negative impact on the environment.

Means of Achieving Target

Millar Western will achieve this target through adhering to the OGRs, the Forest Soils Conservation Task Force Report (AFPA/ALFD 1996) and the Company's Environmental Management System. As described in Company Commitment 12 in Section 3.2.5 - Research,

Millar Western will be developing an operational risk rating system and accompanying assessment program to provide guidance in determining conditions in which forestry operations can be conducted in an environmentally sound manner.

Target Monitoring

Incidents of soil erosion or slumping are monitored on an ongoing basis through formal or informal field inspections and audits completed by Millar Western, the Alberta government or jointly. As per the Company's EMS, all incidents of non-conformance associated with environmental incidents will be reported and tracked within the Company's ISOSoft database.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- The number of non-conformance incidents associated with erosion and slumping, and will provide a summary of each. The summary will include the following information:
    - Incident ID within the Company's ISOSoft database;
    - Date, time and location of incident;
    - General description of incident;
    - General description of remedial measures (if applicable); and
    - Resulting policy or procedural changes (if applicable).

Acceptable Variance

The acceptable variance is zero (0) incidents of non-conformance.

Response

As per Millar Western's EMS, corrective actions will be undertaken immediately to address any incident of non-conformance. The Company will track incidents in the EMS and will undertake review of each incident to determine the cause and potential development of new, or modification of existing policies or procedures to reduce the likelihood of similar incidents occurring again.

Legal / Policy Requirement

This VOIT is a requirement of the Planning Standard and the Company's OGRs.

Operational and Strategic Plan Linkages

Operational controls in Millar Western's EMS are developed based on strategic planning commitments. Operational controls direct on the ground implementation of the strategic plan and allow for annual performance measurements.

VOIT 31 – Number of incidents of non-conformance with respect to rutting in harvest areas (3.1.1.3).

CCFM Criteria: 3. Soil and water quality.
CSA SFM element: 3.1. Soil quantity and quality.
Value: 3.1.1. Soil Productivity.
Objective: 3.1.1.3. Reduce compaction of soils within harvest areas.

Rationale

Adherence to the FMA Operating Ground Rules and Forest Soils Conservation Task Force Report (AFPA/ALFD 1996), ensures proper management to preserve soil productivity. Finer textured soils are most prone to soil compaction, particularly during wet and unfrozen conditions, but its occurrences and severity can be minimized through adhering to these standards and guidelines.

Current Status

In the 2005 Timber Year (May 1, 2005 – April 30, 2006), zero (0) incidents of non-conformance with respect to soil rutting were reported on the DFA.

Target

Zero (0) annual incidents of non-conformance.

Target Supporting Information

As per the OGRs, non-conformance rutting incidents are those in which rutting is present on > 2% of the harvest area (the defined boundaries of a designated harvest area).

A rut is determined by its depth and length of the depression on the soil:

- Where the depth of organic dark humus material is greater than 30 cm, a rut is a depression that shears the organic layer of the soil (a sheared organic will expose a vertical face greater than 20 cm of the organic layer).

- Where the depth of the organic material is less than 30 cm, a rut is a depression exceeding 10 cm into the mineral soil.

Means of Achieving Target

Millar Western will achieve this target through adhering to the OGRs, Forest Soils Conservation Task Force Report (AFPA/ALFD 1996) and the Company's Environmental Management System. As described in Company Commitment 12 in Section 3.2.5 - Research, Millar Western will be developing an operational risk rating system and accompanying assessment program to

provide guidance in determining conditions in which forestry operations can be conducted in an environmentally sound manner.

Target Monitoring

Incidents of soil erosion or slumping are monitored on an ongoing basis through formal or informal field inspections and audits completed by Millar Western, the Alberta government or jointly. As per the Company's EMS, all incidents of non-conformance associated with environmental incidents will be reported and tracked within the Company's ISOSoft database.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- The number of non-conformance incidents associated with rutting, and will provide a summary of each. The summary will include the following information:
    - Incident ID within the Company's ISOSoft database;
    - Date, time and location of incident;
    - General description of incident;
    - General description of remedial measures (if applicable); and
    - Resulting policy or procedural changes (if applicable).

Acceptable Variance

The acceptable variance is zero (0) incidents of non-conformance.

Response

As per Millar Western's EMS, corrective actions will be undertaken immediately to address any incident of non-conformance. The Company will track incidents in the EMS and will undertake review of each incident to determine the cause and potential development of new, or modification of existing policies or procedures to reduce the likelihood of similar incidents occurring again.

Legal / Policy Requirement

This VOIT is a requirement of the Planning Standard and the Company's OGRs.

Operational and Strategic Plan Linkages

Operational controls in Millar Western's EMS are developed based on strategic planning commitments. Operational controls direct on the ground implementation of the strategic plan and allow for annual performance measurements.

VOIT 32 – Percent of eligible third order watersheds in which the annual average runoff coefficient value is > 15% of the baseline condition (3.2.1.1A).

CCFM Criteria: 3. Soil and water quality.

CSA SFM element: 3.2. Water quantity and quality.

Value: 3.2.1. Water quantity.

Objective: 3.2.1.1. Limit impact of timber harvesting on water yield.

Rationale

Maintaining individual third-order watershed water quantity levels within acceptable ranges promotes positive terrestrial and aquatic processes.

Current Status

The current status summaries of runoff coefficient values for third order watersheds are derived from the 2007 timber year output from the forecasting completed on the Preferred Forest Management Scenario (PFMS).

At the end of the 2006 Timber Year, the number and proportion of eligible third functional order watersheds with annual average Runoff Coefficients (RC) > 15% above the baseline condition in the DFA of W11 and W13 are summarized in Table 25.

Table 25. Forecasted third order watersheds with RC values > 15 % above the baseline condition.

FMU	# of watersheds in DFA	# of watershed with > 90 % area in DFA	# of watersheds with C-coefficient value > 15 % above baseline	% of watersheds with C-coefficient value > 15 % above baseline
W11	25	4	0	0.0%
W13	41	12	0	0.0%
Total	66	16	0	0.0%

Target

Zero (0) percent of the eligible third order watersheds exceed the baseline annual average runoff coefficient value by > 15 % in any period over the 200-year planning horizon.

Target Supporting Information

Runoff coefficient is a ratio of precipitation to runoff and is used by Millar Western to predict changes in runoff from changes in forest cover. The higher the runoff coefficient the greater the runoff. A 10% increase in the runoff coefficient, translates into a 10% increase in runoff or water discharge from the watershed.

RC calculation details can be found in *Chapter 5 – Forecasting and the Preferred Forest Management Scenario* and the data set creation is described in the *Appendix XIV – FORWARD Contributions.* A short summary is provided below.

Third order watersheds were identified by FORWARD based on the Strahler stream classification system. Eligible third order watersheds range in size from 5,316 to 18,828 ha. To be eligible for this VOIT, at least 90% of the third order watershed's area must be within the DFA.

The forecasting tools calculated RC values for all third order watersheds at each 5-year time period over the 200-year planning horizon. The lowest predicted RC value forecasted for each watershed over the 200 years was selected as the baseline condition for that watershed. The highest RC value was selected for each watershed regardless of the period in which it occurred and this value was used to determine the percent increase above baseline conditions for the watershed. This approach ensured long-term sustainability of the harvest pattern.

The maximum 15% target was derived by the FORWARD IAG from observations of measured runoff and the variability observed across the landscape. Long term monitoring may revise targets in future management plans.

Means of Achieving Target

These targets are the output values from the forecasting process under the PFMS. Millar Western and the other forestry operators will achieve these targets through successful implementation of the spatial harvest sequence (SHS) and adherence to the strategic and operational constraints incorporated into the forecasting process. Since these targets were identified through projecting the future state of the forest, based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence are likely to result in not achieving the targets. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Target Monitoring

These targets will be monitored through annually assessing Millar Western and the other forestry operators' adherence to the SHS on the DFA. The Company's completion of annual DFA inventory updates of harvesting and other unnatural disturbances and natural disturbances will provide the means to complete this assessment.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Modeled average RC value, for the eligible third order watersheds, based on the actual harvesting activity, and identity of any that exceed the baseline annual average runoff coefficient value by > 15%; and

- Percent of eligible third order watersheds that exceed the baseline annual average runoff coefficient value by > 15%.

Acceptable Variance

The acceptable variance for this target is zero (0) percent.

Response

If the percent of eligible third functional order watersheds exceeds the acceptable variance, Millar Western will investigate the cause(s), and will consider altering harvest location and timing to mitigate effects.

Legal / Policy Requirement

This VOIT is a requirement of the Planning Standard, and is associated with The Water Act.

Operational and Strategic Plan Linkages

The Spatial Harvest Sequence (SHS) is the operational tool used to link the strategic predictions and operational implementation on the DFA. Following the SHS will ensure the runoff coefficient predictions derived for the DFA are maintained.

VOIT 33 – Percent of eligible first order watersheds in which the annual average runoff coefficient value is > 50 % of the baseline condition (3.2.1.1B).

CCFM Criteria: 3. Soil and water quality.

CSA SFM element: 3.2. Water quantity and quality.

Value: 3.2.1. Water quantity.

Objective: 3.2.1.1. Limit impact of timber harvesting on water yield.

Rationale

Maintaining individual first order watershed water quantity levels within acceptable ranges promotes positive terrestrial and aquatic processes.

Current Status

The current status summaries of runoff coefficient values for first order watersheds are derived from the 2007 Timber Year output from the forecasting completed on the Preferred Forest Management Scenario (PFMS).

The current number and proportion of eligible first order watersheds with runoff coefficients > 50% above the baseline condition in the DFA of W11 and W13 are summarized in Table 26. No watersheds have runoff coefficients of > 100%.

Table 26. Forecasted (2007) percent of eligible first order watersheds with RC values > 50 % above the baseline condition.

FMU	# of watersheds in DFA	# of watershed with > 50 % area in DFA	# of watersheds with C- coefficient value > 50 % above baseline	% of watersheds with C-coefficient value > 50 % above baseline
W11	377	303	1	0.3%
W13	622	538	16	3.0%
Total	999	841	17	2.0%

Target

Maximum 5% of the eligible first order watersheds exceed the baseline annual average runoff coefficient value by > 50% and none exceed the baseline condition by 100%.

Target Supporting Information

Runoff coefficient is a ratio of precipitation to runoff and is used by Millar Western to predict changes in runoff from changes in forest cover. The higher the runoff coefficient the greater the runoff. A 10% increase in the runoff coefficient, translates into a 10% increase in runoff and watered discharge.

The maximum 50% target was derived by the FORWARD IAG from observations of measured runoff in experimental watersheds with controlled harvesting activities and additional modeling work. Long term monitoring may revise targets in future management plans.

RC calculation details for first order watersheds can be found in *Chapter 5 – Forecasting and the Preferred Forest Management Scenario* and the data set creation is described in *Appendix XIV – FORWARD Contributions*. A short summary is provided below.

First order watersheds were identified by FORWARD based on the Strahler stream classification system. Eligible first order watersheds range in size from 87 to 1,562 ha. To be eligible for this VOIT, first order watersheds must have at least 50% of their area within the DFA. The forecasting tools calculated RC values for all first order watersheds at each 5-year time period within the 200-year planning horizon. The lowest forecasted RC value for each watershed over the 200 years was selected as the baseline condition for that watershed. The highest RC value forecasted was selected for each watershed regardless of the period in which it occurred and this value was used to determine the percent increase above baseline conditions for the watershed. This ensures sustainability of the harvest pattern.

Means of Achieving Target

These targets are the output values from the forecasting process under the PFMS. Millar Western and the other forestry operators will achieve these targets through successful implementation of the spatial harvest sequence (SHS) and adherence to the strategic and operational constraints incorporated into the forecasting process. Since these targets were identified through projecting the future state of the forest, based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence are likely to result in not achieving the targets. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Target Monitoring

These targets will be monitored through annually assessing Millar Western and the other forestry operators' adherence to the SHS on the DFA. The Company's completion of annual DFA inventory updates of harvesting and other unnatural disturbances and natural disturbances will provide the means to complete this assessment.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Modeled average RC value, for the eligible first order watersheds, based on the actual harvesting activity, and identity of any that exceed the baseline annual average runoff coefficient value by > 50%; and

- Percent of eligible first order watersheds that exceed the baseline annual average runoff coefficient value by > 50%.

Acceptable Variance

The acceptable variance for this target is + 5%.

Response

If the percent of eligible third functional order watersheds exceeds the acceptable variance, Millar Western will investigate the cause(s), and will consider altering harvest location and timing to mitigate effects.

Legal / Policy Requirement

This VOIT is a requirement of the Planning Standard, and is associated with The Water Act.

Operational and Strategic Plan Linkages

The Spatial Harvest Sequence is the operational tool used to link the strategic predictions and operational implementation on the DFA. Following the SHS will ensure the runoff coefficient predictions derived for the DFA are maintained.

VOIT 34 – Existence of research initiative to develop relationship between operations and water quality, and implementation of recommendations to mitigate negative impact on water quality (3.2.1.2).

CCFM Criteria: 3. Soil and water quality.
CSA SFM element: 3.2. Water quantity and quality.
Value: 3.2.1. Water quantity.
Objective: 3.2.1.2. Maintain water quality.

Rationale

Through the investigation and subsequent implementation of strategic and operational forest management approaches, water quality within, and downstream of, the DFA can be maintained or improved.

Current Status

Data collection and preliminary assessments are underway for the development of the relationship between forestry operations and water quality. This initiative is being furthered under the FORWARD II project.

Target

Continue research initiative until at least 2012 and during this time develop relationships between forestry operations and water quality and incorporate relevant findings into strategic and operational planning.

Target Supporting Information

N/A

Means of Achieving Target

Millar Western will achieve this target through providing financial and other support to the FORWARD II project.

Target Monitoring

Millar Western will monitor this target through its participation on the FORWARD II project team.

Reporting

In the Stewardship Report, Millar Western will report the following:

- The status of the water quality research initiative; and

- The recommendations that the Company has implemented for the purposes of mitigating impact on water quality due to forestry operations.

Acceptable Variance

N/A

Response

N/A.

Legal / Policy Requirement

This VOIT has been incorporated into Millar Western's DFMP as a means of addressing the CSA SFM Element 3.2.

Operational and Strategic Plan Linkages

Since water quality assessment tools and mitigation strategies have not yet been developed, they have no defined plan linkages.

VOIT 35 – Riparian buffers maintained as outlined in FMA Operating Ground Rules or Alberta government approved riparian management strategy (3.2.2.1).

CCFM Criteria: 3. Soil and water quality.

CSA SFM element: 3.2. Water quantity and quality.

Value: 3.2.2. Effective riparian areas.

Objective: 3.2.2.1. Minimize impact of operations on riparian areas.

Rationale

Adherence to the FMA Operating Ground Rules, or other Alberta government approved riparian management strategy, ensures proper management of riparian areas and their role in preserving water quantity and quality values.

Current Status

In the 2005 Timber Year (May 1, 2005 – April 30, 2006), zero (0) incidents of non-conformance related to riparian areas were reported.

Target

Zero (0) annual incidents of non-conformance.

Target Supporting Information

Millar Western's current OGRs will apply to this target until they are replaced by those associated with this 2007 DFMP. OGR negotiation is scheduled for the fall of 2007.

Millar Western will be developing a riparian management strategy based on the research completed under the FORWARD II project. This strategy will focus on harvesting trees in areas designated as riparian buffers in the OGRs.

Means of Achieving Target

This target will be achieved through adhering to the OGRs or other Alberta government approved riparian management strategy in force.

Target Monitoring

As per the Company's EMS, all incidents of non-conformance associated with environmental incidents will be reported and tracked within the Company's ISOSoft database.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- The number of non-conformance incidents associated with riparian areas, and will provide a summary of each. The summary will include the following information:
    - Incident ID within the Company's ISOSoft database;
    - Date, time and location of incident;
    - General description of incident;
    - General description of remedial measures (if applicable); and
    - Resulting policy or procedural changes (if applicable).

Acceptable Variance

The acceptable variance is zero (0) non-conformance incidents.

Response

As per Millar Western's EMS, corrective actions will be undertaken immediately to address any incident of non-conformance. The Company will track incidents in the EMS and will undertake review of each incident to determine the cause and potential development of new, or modification of existing policies or procedures to reduce the likelihood of similar incidents occurring again.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard and Millar Western's OGRs.

Operational and Strategic Plan Linkages

Operational controls in Millar Western's EMS are developed based on strategic planning commitments. Operational controls direct on the ground implementation of the strategic plan and allow for annual performance measurements.

2.2.4 Global Ecological Cycles

As described within the CSA Z809-02 standard, the VOITs associated with the CCFM SFM Criterion 4 (Forest ecosystem contributions to global ecological cycles), are intended to "Maintain forest conditions and management activities that contribute to the health of global ecological cycles." (CSA 2002) Millar Western has included two VOITs under this criterion.

VOIT 36 – Existence of carbon budget analysis on the Preferred Forest Management Scenario of the 2007 DFMP (4.1.1.1).

CCFM Criteria: 4. Global ecological cycles.
CSA SFM element: 4.1. Carbon uptake and storage.
Value: 4.1.1. Understanding of carbon balance on DFA.
Objective: 4.1.1.1. Produce a carbon budget for DFA.

Rationale

Through completing assessments of the carbon surplus or deficit on the DFA, Millar Western will establish a baseline for which to assess various future forest management strategies, which may aid in increasing the amount of carbon that the forest ecosystem can remove and store from the atmosphere.

Current Status

No prior carbon budget analysis has been completed by Millar Western on the DFA.

Target

Complete a carbon budget of the DFA as part of the 2007 DFMP.

Target Supporting Information

As described in *Chapter 3 – Plan Development*, Millar Western assembled a Carbon Impact Assessment Group to develop a carbon budget for the DFA, based on the PFMS. This work has been completed and is contained within *Appendix XV – Carbon Accounting on the DFA.*

Means of Achieving Target

Millar Western has achieved this target. See *Appendix XV – Carbon Accounting on the DFA.*

Target Monitoring

No monitoring is required for this VOIT.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- Summary of any additional carbon budget analysis completed on the DFA over the 2007 DFMP period.

Within the Commitments Reporting section, the Company has reported the following:

- Modeled carbon levels on the DFA for the PFMS over the 200-year planning horizon.

Acceptable Variance

N/A

Response

N/A

Legal / Policy Requirement

A VOIT associated with the CSA SFM Element 4.1 – Carbon uptake and storage, was required, but not defined as part of the Planning Standard.

Operational and Strategic Plan Linkages

There are no carbon modeling strategic or operational plan linkages at this time, but in the future, these linkages may exist through incorporating strategic and operational plan considerations based on carbon modeling analysis.

VOIT 37 – (4.2).

CCFM Criteria: 4. Global ecological cycles.
CSA SFM element: 4.2. Forest land conversation.

This VOIT is identified, as it is a CSA SFM Element. It is covered entirely under VOIT 22 (2.1.2.1).

2.2.5 Multiple Benefits to Society

As described within the CSA Z809-02 standard, the VOITs associated with the CCFM SFM Criterion 5 (Multiple benefits to society), are intended to "Sustain flows of forest benefits for current and future generations by providing multiple goods and services." (CSA 2002) Millar Western has included eight VOITs under this criterion.

VOIT 38 – Compliance with Annex 1 of the Alberta Forest Management Planning Standard (April 2006), regarding the process for establishing appropriate AACs (5.1.1.1).

CCFM Criteria: 5. Multiple benefits to society.
CSA SFM element: 5.1. Timber and non-timber benefits.
Value: 5.1.1. Sustainable timber supplies.
Objective: 5.1.1.1. Establish appropriate AACs.

Rationale

Establishment, approval and implementation of appropriate AACs for the sustained yield units of the DFA (W11 and W13) will ensure that the forest resource is being managed in a sustainable manner.

Current Status

The approach used by Millar Western to determine the AAC of the DFA (W11 and W13) was based on Annex 1 of the Planning Standard (April 2006). Any deviation from Annex 1 was reviewed with the Alberta government during the Timber Supply Analysis Impact Assessment Group meetings conducted throughout the entire DFMP plan development process. The process used for AAC determination is documented in *Chapter 5 – Forecasting and the Preferred Forest Management Scenario.*

Target

Receive the Alberta government's approval of the AAC, and the AAC determination process for the DFA.

Target Supporting Information

The process for determining the AAC associated with the DFA is defined in *Chapter 5 – Forecasting and the Preferred Forest Management Scenario.*

Means of Achieving Target

Millar Western will achieve the target through adhering to Annex 1 of the Planning Standard and through negotiating any deviations from this standard with the Alberta government.

Target Monitoring

N/A

Reporting

The process used to determine the AAC for the 2007 DFMP is documented in *Chapter 5 – Forecasting and the Preferred Forest Management Scenario*. Millar Western will indicate deviations from Annex 1 in *Appendix I – RFP Checklist*, that is submitted to the Alberta government as part of the 2007 DFMP submission.

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- The Alberta government's response to the Company's AAC determination process and any necessary follow up actions that the Company is or will undertake; and

- Any re-calculation of AAC for the DFA that occurs prior to the 2017 – 2026 DFMP, accompanied by the justification for the re-calculation.

Acceptable Variance

Variations from the AAC determination process as described in Annex 1 of the Planning Standard (April 2006), are permitted with the approval of the Alberta government.

Response

Millar Western will provide the Alberta government with additional justification or information upon request, where variations from the AAC determination process exist between that undertaken for the development of the 2007 DFMP and those stated in Annex 1 of the Planning Standard.

Legal / Policy Requirement

This VOIT is a requirement of the Planning Standard and is legislated in The Forest Act and the Timber Management Regulations.

Operational and Strategic Plan Linkages

Determination of the AAC for the DFA is one of the critical inputs to the operational planning process. It is used to determine how much volume, contained within the Spatial Harvest Sequence, needs to be scheduled in the Annual Operating Plan.

VOIT 39 – Adherence to communication initiatives related to non-timber commercial rights holders, as defined in the external communications section of the DFMP/SFMP Communication Implementation Plan. (5.1.2.1).

CCFM Criteria: 5. Multiple benefits to society.
CSA SFM element: 5.1. Timber and non-timber benefits.
Value: 5.1.2. Maintain non-timber supplies.
Objective: 5.1.2.1. Maintain communication with non-timber commercial right holders.

Rationale

As a means of achieving sustainable forest management, both timber and non-timber values must be considered in forest management planning. In addition to forestry operations, there are many other commercial, recreational and spiritual activities that occur on the DFA and need to be identified, investigated and incorporated into various planning levels.

The extent of the non-timber commercial related activities that occur on the DFA requires a solid process to ensure that the various groups are adequately included in the overall forest management planning process.

Current Status

As part of the development of the 2007 DFMP, Millar Western prepared a *DFMP Development Communication Plan* (*Appendix II*), which included significant opportunities for stakeholders to provide input over the plan development horizon. One component of the 2007 DFMP, which was developed with input from stakeholders, is the *DFMP/SFMP Communication Implementation Plan (Appendix V)*. The external communication section of this plan identifies and describes other stakeholder communication initiatives for incorporating stakeholder input into the planning process. This plan is consistent with the expectations of the CSA Z809-02 standard.

Target

Adhere to relevant external communication initiatives related to non-timber commercial rights holders.

Target Supporting Information

The External Communications section of the *DFMP/SFMP Implementation Communication Plan* (*Appendix V*) describes how the Company will promote new, and maintain existing, communication initiatives with stakeholders. The initiatives associated with this indicator and target included:

- Development and maintenance of a stakeholder registry;

- Continuation of the existing Environmental Co-stewardship Committee;
- Implementation and maintenance of a permanent Public Advisory Committee;
- Holding open houses/public information sessions;
- Incorporating public participation component into corporate website;
- Implementation of 24/7 hotline;
- Development and distribution of Annual Environmental Performance Report;
- Communication through local media and press releases; and
- Implementation of process for fulfilling public requests for information or capturing concerns.

Means of Achieving Target

Millar Western will achieve this target through implementing and adhering to the relevant components of the Company's *DFMP/SFMP Implementation Communication Plan (Appendix V)*.

Target Monitoring

Millar Western will monitor their adherence to the relevant *DFMP/SFMP Implementation Communication Plan (Appendix V)* initiatives through internal updates. All communication initiatives will be captured in the Woodlands Communication Database.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- Summary of the external stakeholder consultation and communication initiatives, and the Company's qualitative assessment of their success; and
- Summary of the stakeholder registry (the number of members by stakeholder class).

Acceptable Variance

No acceptable variance.

Response

In instances where Millar Western does not adhere to the initiatives associated with this indicator and target, they will review these instances and determine if the Company needs to undertake actions to resolve them for the future. The Company will identify these instances and provide a

rationale and the actions taken to resolve, and will provide a summary of these in the Annual and Stewardship Reports.

Legal / Policy Requirement

This VOIT has been incorporated into Millar Western's DFMP as a means of addressing the CSA SFM Element 5.1.

Operational and Strategic Plan Linkages

Stakeholder communication and input is a key component of Millar Western's strategic (i.e. Detailed Forest Management Plan) and operational (i.e. Annual Operating Plans) forest management planning processes. Stakeholder input is captured during plan development and considered for inclusion at the various planning levels.

VOIT 40 – Number of non-conformance incidents as per The Heritage Resources Act. (5.1.2.2).

CCFM Criteria: 5. Multiple benefits to society.

CSA SFM element: 5.1. Timber and non-timber benefits.

Value: 5.1.2. Maintain non-timber supplies.

Objective: 5.1.2.2. Protect heritage values.

Rationale

The protection of heritage values in forest management is a priority as these values have cultural/historic significance to individuals or groups.

Current Status

In the 2005 Timber Year (May 1, 2005 – April 30, 2006), one (1) non-conformance incident related to the Heritage Resource Act was reported (refer to Table 27).

Table 27. 2005 Timber Year non-conformances related to Heritage Resources Act.

Timber Year	# of Non-compliances	Date of Non-compliance	Description of Non-compliance
2005	1	2-Nov-05	Old cabin was protected however, harvesting continued in the area. Millar Western's Stop Work Policy (SOP-ENV 003) was not followed.

Target

Zero (0) annual incidents of non-conformance.

Target Supporting Information

As part of Millar Western's Environmental Management System (EMS), the Company has developed and implemented processes to educate employees and contractors in the identification and protection of heritage values. These processes describe the considerations and requirements for conducting planning and operational activities on the DFA.

Means of Achieving Target

Millar Western will achieve this target through adhering to the Company's OGRs, as they relate to planning and operations associated with heritage values. In addition, the Company will develop and implement a process to update their GIS with heritage values. This information will support planning efforts and will facilitate reporting.

Target Monitoring

As per the Company's EMS, all incidents of non-conformance associated with heritage value incidents will be reported and tracked within the Company's ISOSoft database.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- The number of non-conformance incidents associated with The Heritage Resources Act, and will provide a summary of each. The summary will include the following information:
    - Incident ID within the Company's ISOSoft database;
    - Date, time and location of incident;
    - General description of incident;
    - General description of remedial measures (if applicable); and
    - Resulting policy or procedural changes (if applicable).

Acceptable Variance

The acceptable variance is zero (0) non-conformance incidents.

Response

As per Millar Western's EMS, corrective actions will be undertaken immediately to address any incident of non-conformance. The Company will track incidents in the EMS and will undertake review of each incident to determine the cause and potential development of new, or modification of existing policies or procedures to reduce the likelihood of similar incidents occurring again.

Legal / Policy Requirement

This VOIT has been incorporated into Millar Western's DFMP as a means of addressing the CSA SFM Element 5.1. The Alberta government's Historical Resources Act is the legislation that defines how cultural and heritage resources are to be managed by those who conduct operations on public land.

Operational and Strategic Plan Linkages

Operational controls in Millar Western's environmental management system are developed based on strategic planning commitments. Operational controls direct the on-ground implementation of the strategic plan and allow for annual performance measurements. Pre-work

meetings that occur between Millar Western staff and contractors prior to work commencing also include discussing any existing or potential cultural heritage sites in the area.

VOIT 41 – Development and implementation of process for identifying areas of high aesthetic value and mitigating visual impacts of harvest operations (5.1.2.3).

CCFM Criteria: 5. Multiple benefits to society.
CSA SFM element: 5.1. Timber and non-timber benefits.
Value: 5.1.2. Maintain non-timber supplies.
Objective: 5.1.2.3. Minimize visual impact of harvesting activities along defined corridors.

Rationale

The DFA contributes to values other than forest products production; one such value is visual aesthetics. Millar Western recognizes that recreational users of the DFA, as well as those who simply travel through the area, generally appreciate established forests, as opposed to areas recently harvested. This is particularly the case in certain areas with high aesthetic value, such as viewpoints along, or on, high use recreation areas.

Current Status

Assessment and identification of areas with high aesthetic value within the DFA has been completed.

Target

By November 30, 2008, develop and implement process for identifying areas of high aesthetic value and for mitigating visual impacts resulting from forestry operations.

Target Supporting Information

N/A

Means of Achieving Target

Millar Western will achieve the target though analysis of visual models and consultation with other DFA forestry operators and the PPG. Once there is agreement on the high aesthetic value areas and the process, Millar Western will implement the process, recognizing that it or the classification of the areas may require refinement over time.

Target Monitoring

Millar Western will monitor the progress of this target internally.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report on the following:

- Progress on development and implementation of process for identifying areas of high aesthetic value and mitigating visual impacts of harvest operations.

Actual aesthetic value reporting targets will be defined following the development and implementation of the target.

Acceptable Variance

The acceptable is six (6) months (May 31, 2009).

Response

Millar Western will include a rationale for the not achieving the target in the Annual Report, and will re-define the timelines for achieving the target.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Once this target is achieved, visual quality objectives will be incorporated into strategic planning as constraints to timber supply modeling and into operational planning though site specific visual assessment and resultant visual impact mitigation.

VOIT 42 – Percent of Whitecourt FireSmart Community Zone area in the 'extreme' and 'high' Fire Behaviour Potential rating categories (5.2.1.1A).

CCFM Criteria: 5. Multiple benefits to society.

CSA SFM element: 5.2. Communities and sustainability.

Value: 5.2.1. Risk to communities and landscapes values from wildfire is low.

Objective: 5.2.1.1. To reduce wildfire threat potential by reducing fire behavior, fire occurrence, threats to values at risk and enhancing fire suppression capability.

Rationale

Minimizing the area in the 'extreme' and 'high' FBP classes in the Whitecourt FireSmart Community Zone is intended to reduce the risk and severity of wildfire impact to the community of Whitecourt.

Current Status

The current status summaries of fire behaviour potential ratings are derived from the 2007 Timber Year output from the forecasting completed on the Preferred Forest Management Scenario (PFMS).

The current (2007) status of the area and proportion of the Whitecourt FireSmart Community Zone within the "extreme" and "high" FBP rating categories are summarized in Table 28.

Table 28. Current (2007) fire behaviour potential area classifications for the Whitecourt FireSmart Community Zone.

FBP Value	FBP Description	Area (ha)	Area (%)
N/A	N/A	7,910	7%
1 - 10	Low	41,372	37%
11 - 30	Moderate	30,993	28%
31 - 70	High	7,619	7%
71 - 100	Extreme	23,008	21%
Total		110,901	100%
31 - 100	High + Extreme	30,627	28%

Target

At the start of the 2017 Timber Year, limit the combined area in the 'extreme' and 'high' FPB rating category to 28% (31,496 ha of the 110,901 ha) of the Whitecourt FireSmart Community Zone, as summarized in Table 29.

Table 29. Target (2017) fire behaviour potential area classifications for the Whitecourt FireSmart Community Zone.

FBP Value	FBP Description	Area (ha)	Area (%)
N/A	N/A	7,910	7%
1 - 10	Low	44,643	40%
11 - 30	Moderate	26,852	24%
31 - 70	High	11,792	11%
71 - 100	Extreme	19,704	18%
Total		110,901	100%
31 - 100	High + Extreme	31,496	28%

Target Supporting Information

The WFCZ boundary was derived and reviewed by the Alberta government during FireSmart DFMP development. Fire behaviour potential target is based on DFMP forecasted FBP at the beginning of the 2017 Timber Year. Forecasted fire behaviour potential was derived using specially developed yield curves representing fire fuel codes that were carried within the forecasting tools. All forested stands in the DFA were incremented to account for growth and harvesting impacts on fire fuel codes. 2017 fire behaviour potential was derived by loading the updated fuel code coverage at 2017 for all forested stands in DFA into the Alberta government's FireSmart prediction tool set (refer to *Chapter 5 – Forecasting and the Preferred Forest Management Scenario*).

Means of Achieving Target

These targets are the output values from the forecasting process under the PFMS. Millar Western and the other forestry operators will achieve these targets through successful implementation of the spatial harvest sequence (SHS) and adherence to the strategic and operational constraints incorporated into the forecasting process. Since these targets were identified through projecting the future state of the forest, based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence are likely to result in not achieving the targets. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Target Monitoring

These targets will be monitored through annually assessing Millar Western and the other forestry operators' adherence to the SHS on the DFA. The Company's completion of annual DFA inventory updates of harvesting and other unnatural disturbances and natural disturbances will provide the means to complete this assessment.

Reporting

In the Stewardship Report, Millar Western will report the following:

- The actual area and percent change in the "high" and "extreme" FBP rating categories for the Whitecourt FireSmart Community Zone.

Within *Appendix XXIV – VOIT Reporting*, the Company has reported the following as required in the Planning Standard:

- Table summarizing the projected area of 'extreme' and 'high' FBP ranking at years 0, 10, 20 and 50 of the 200-year planning horizon in the Whitecourt FireSmart Community Zone; and

- Maps showing the projected distribution of 'extreme' and 'high' FBP ranking at years 0, 10, 20 and 50 of the 200-year planning horizon in the Whitecourt FireSmart Community Zone.

Acceptable Variance

None.

Response

Variances will be rationalized when encountered, and the Company will review whether adjustments to the SHS are warranted.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Compartment final harvest plans are developed consistent with the commitments defined in the DFMP, and the spatial harvest sequence developed as part of the PFMS within the DFMP. From the compartment operating plans, an annual block harvest schedule is developed as part of the annual operating plan. The annual operating plan is submitted for review and approval by the Alberta government. This approval provides Millar Western the authority to harvest in accordance with the schedule defined in the plan. Harvesting under the authority of the AOP is completed in accordance with the operating ground rules (OGR) tied to the FMA. These OGRs are developed in concert with the DFMP development, or following the DFMP approval.

VOIT 43 – Percent of DFA area in the 'extreme' and 'high' Fire Behaviour Potential rating categories (5.2.1.1B).

CCFM Criteria: 5. Multiple benefits to society.

CSA SFM element: 5.2. Communities and sustainability.

Value: 5.2.1. Risk to communities and landscapes values from wildfire is low.

Objective: 5.2.1.1. To reduce wildfire threat potential by reducing fire behavior, fire occurrence, threats to values at risk and enhancing fire suppression capability.

Rationale

Minimizing the area in the 'extreme' and 'high' FBP classes is intended to reduce the risk and impact of fire to the timber and non-timber forest resources in the Defined Forest Area.

Current Status

The current status summaries of fire behaviour potential ratings are derived from the 2007 Timber Year output from the forecasting completed on the Preferred Forest Management Scenario (PFMS).

The current (2007) status of the area and proportion of the DFA within the "extreme" and "high" FBP rating categories are summarized in Table 30.

Table 30. Current (2007) fire behaviour potential area classifications for the DFA.

FBP Value	FBP Description	Area (ha)	Area (%)
N/A	N/A	14,504	3%
1 - 10	Low	145,468	32%
11 - 30	Moderate	137,364	30%
31 - 70	High	58,904	13%
71 - 100	Extreme	96,231	21%
Total		452,471	100%
31 - 100	High + Extreme	155,135	34%

Target

At the start of the 2017 Timber Year, limit the combined area in the 'extreme' and 'high' FPB rating category to 37% (169,209 ha of the 452,471 ha) of the DFA, as summarized in Table 31.

Table 31. Target (2017) fire behaviour potential area classifications for the Whitecourt FireSmart Community Zone.

FBP Value	FBP Description	Area (ha)	Area (%)
N/A	N/A	14,504	3%
1 - 10	Low	138,620	31%
11 - 30	Moderate	130,139	29%
31 - 70	High	56,304	12%
71 - 100	Extreme	112,905	25%
Total		452,471	100%
31 - 100	High + Extreme	169,209	37%

Target Supporting Information

Fire behaviour potential target is based on DFMP forecasted FBP at the start of the 2017 Timber Year. Forecasted fire behaviour potential was derived using specially developed yield curves representing fire fuel codes that were carried within the forecasting tools. All forested stands in the DFA were incremented to account for growth and harvesting impacts on fire fuel codes. 2017 fire behaviour potential was derived loading the updated fuel code coverage at 2017 for all forested stands in DFA into the Alberta government's FireSmart prediction tool set (refer to *Chapter 5 – Forecasting and the Preferred Forest Management Scenario*).

Means of Achieving Target

These targets are the output values from the forecasting process under the PFMS. Millar Western and the other forestry operators will achieve these targets through successful implementation of the spatial harvest sequence (SHS) and adherence to the strategic and operational constraints incorporated into the forecasting process. Since these targets were identified through projecting the future state of the forest, based on Millar Western and the other forestry operator's adherence to the spatial harvest sequence, unforeseen and uncontrollable events that result in deviation from the spatial harvest sequence are likely to result in not achieving the targets. These significant events can include insect infestations, wildfire or excessive land withdrawals from the DFA.

Target Monitoring

These targets will be monitored through annually assessing Millar Western and the other forestry operators' adherence to the SHS on the DFA. The Company's completion of annual DFA inventory updates of harvesting and other unnatural disturbances and natural disturbances will provide the means to complete this assessment.

Reporting

In the Stewardship Report, Millar Western will report the following:

- The actual area and percent change in the "high" and "extreme" FBP rating categories for the DFA.

Within *Appendix XXIV – VOIT Reporting*, the Company has reported the following, as required in the Planning Standard:

- Table summarizing the projected area of 'extreme' and 'high' FBP ranking at years 0, 10, 20 and 50 of the 200-year planning horizon in the DFA; and

- Maps showing the projected distribution of 'extreme' and 'high' FBP ranking at years 0, 10, 20 and 50 of the 200-year planning horizon in the DFA.

Acceptable Variance

No specific variance is defined for this target.

Response

Variances will be rationalized when encountered, and the Company will review whether they need to adjust the SHS.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Compartment final harvest plans are developed consistent with the commitments defined in the DFMP, and the spatial harvest sequence developed as part of the PFMS within the DFMP. From the compartment operating plans, an annual block harvest schedule is developed as part of the annual operating plan. The annual operating plan is submitted for review and approval by the Alberta government. This approval provides Millar Western the authority to harvest in accordance with the schedule defined in the plan. Harvesting under the authority of the AOP is completed in accordance with the operating ground rules (OGR) tied to the FMA. These OGRs are developed in concert with the DFMP development, or following the DFMP approval.

VOIT 44 – Adherence to communication initiatives related to integrating other uses and timber management activities, as defined in the external communications section of the DFMP Communication Implementation Plan (5.2.2.1).

CCFM Criteria: 5. Multiple benefits to society.
CSA SFM element: 5.2. Communities and sustainability.
Value: 5.2.2. Provide opportunities to derive benefits and participate in use and management.
Objective: 5.2.2.1. Integrate other uses and timber management activities.

Rationale

As a means of achieving sustainable forest management, both timber and non-timber values must be considered in forest management planning. In addition to forestry operations, there are many other commercial, recreational and spiritual activities that occur on the DFA and need to be identified, investigated and incorporated into various planning levels.

The extent of the non-timber related activities that occur on the DFA requires a solid process to ensure that the various groups are adequately included in the overall forest management planning process.

Current Status

As part of the development of the 2007 DFMP, Millar Western implemented a DFMP Development Communication Plan, which included significant opportunities for stakeholders to provide input over the plan development horizon. One component of the 2007 DFMP, which was developed with input from stakeholders, is the *DFMP/SFMP Communication Implementation Plan (Appendix V)*. The external communication section of this plan identifies and describes other stakeholder communication initiatives for incorporating stakeholder input into the planning process. This plan is consistent with the expectations of the CSA Z809-02 standard.

Target

Adhere to communication initiatives related to the integration of other uses and timber management activities.

Target Supporting Information

The External Communications section of the *DFMP/SFMP Implementation Communication Plan* (*Appendix V*) describes how the Company will promote new, and maintain existing, communication initiatives with stakeholders. The initiatives associated with this indicator and target included:

- Development and maintenance of a stakeholder registry;

- Continuation of the existing Environmental Co-stewardship Committee;
- Implementation and maintenance of a permanent Public Advisory Committee;
- Holding open houses/public information sessions;
- Incorporating public participation component into corporate website;
- Implementation of 24/7 hotline;
- Development and distribution of Annual Environmental Performance Report;
- Communication through local media and press releases;
- Implementation of process for fulfilling public requests for information or capturing concerns; and
- Participation in Whitecourt Forest Interpretive Centre and Huestis Demonstration Forest.

Means of Achieving Target

Millar Western will achieve this target through implementing and adhering to the relevant components of the Company's DFMP/SFMP Implementation Communication Plan (Appendix V).

Target Monitoring

Millar Western will monitor their adherence to the relevant *DFMP/SFMP Implementation Communication Plan (Appendix V)* initiatives through internal updates. All communication initiatives will be captured in the Communication Tracking Application.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- Summary of the external stakeholder consultation and communication initiatives, and the Company's qualitative assessment of their success; and
- Summary of the stakeholder registry (the number of members by stakeholder class).

Acceptable Variance

No acceptable variance.

Response

In instances where Millar Western does not adhere to the initiatives associated with this indicator and target, they will review these instances and determine if the Company needs to undertake actions to resolve them for the future. The Company will identify these instances and provide a rationale and the actions taken to resolve, and will provide a summary of these in the Annual and Stewardship Reports.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Stakeholder communication and input is a key component of Millar Western's strategic (i.e. Detailed Forest Management Plan) and operational (i.e. Annual Operating Plans) forest management planning processes. Stakeholder input is captured during plan development and considered for inclusion at the various planning levels.

VOIT 45 – Difference between managed and natural stand yield (5.2.3.1).

CCFM Criteria: 5. Multiple benefits to society.

CSA SFM element: 5.2. Communities and Sustainability.

Value: 5.2.3. Forest productivity.

Objective: 5.2.3.1. Maintain Long Run Sustained Yield Average.

Rationale

In order to maintain a sustainable forest that produces an acceptable mix of both timber and non-timber benefits, the timber productivity of the forest needs to be maintained or increased over the long term. This is necessary to maintain timber production while non-timber uses increase the pressure on the existing landbase.

To quantify the forest's productivity, the maximum Mean Annual Increment (MAI) for each yield strata have been compiled and multiplied by the area represented under each strata on the current managed landbase.

Current Status

The managed stand yield curves used by Millar Western for the Timber Supply Analysis component of the 2007 DFMP, result in a higher potential productivity than the natural stand yield curves. Refer to Table 32 and Table 33 for W11 and W13 respectively.

Table 32. W11 Managed Landbase natural and managed stand maximum MAIs.

		Natural			Managed		
Species Strata	Area (ha)	Age @ Max MAI[1]	Max MAI[1] (m3/ha/yr)	Potential Productivity (m3/yr)	Age @ Max MAI[1]	Max MAI[1] (m3/ha/yr)	Potential Productivity (m3/yr)
AW	53,185	86	2.13	113,032	95	2.13	113,146
BW	130	85	2.25	293	90	2.18	284
AP	1,505	85	1.99	2,995	85	2.10	3,161
AS	4,875	85	1.99	9,701	85	2.10	10,238
PA	1,555	95	2.29	3,566	105	2.54	3,954
SA	5,066	95	2.29	11,618	105	2.54	12,883
PL	11,588	90	1.74	20,213	145	1.92	22,278
SW	9,463	112	1.96	18,556	115	2.20	20,783
Total	87,367			179,976			186,727

[1] Mean annual increment

Table 33. W13 Managed Landbase natural and managed stand maximum MAIs.

Species Strata	Area (ha)	Natural			Managed		
		Age @ Max MAI[1]	Max MAI[1] (m3/ha/yr)	Potential Productivity (m3/yr)	Age @ Max MAI[1]	Max MAI[1] (m3/ha/yr)	Potential Productivity (m3/yr)
AW	57,786	86	2.78	160,767	86	3.00	173,284
BW	1,105	85	2.25	2,485	90	2.18	2,408
AP	5,987	100	3.51	20,993	108	3.53	21,107
AS	19,096	90	2.83	54,061	91	2.83	54,115
PA	10,272	119	2.37	24,363	128	2.31	23,754
SA	17,730	85	2.61	46,341	90	2.50	44,264
PL	66,718	115	2.69	179,448	115	3.24	216,380
SB	10,805	89	1.59	17,169	94	1.52	16,439
SW	16,917	115	2.74	46,364	132	3.00	50,833
Total	206,416			551,991			602,583

[1] Mean annual increment

Target

No net decrease in stand yield from natural to managed stands.

Target Supporting Information

Comparison of managed and natural stand yields are made by comparing the mean annual increments at the forest level. The sum of the mean annual increment times the strata area is the Long Run Sustained Yield Average (LRSYA), which is the maximum theoretical sustainable harvest volume.

Means of Achieving Target

There are 2 components to this VOIT. 1) Create managed stand yield curves that are not lower than natural curves for the DFMP and 2) establish managed stands in the field that meet the DFMP yield expectations. Field implementation is described in the *Growth and Yield Plan* (*Appendix VIII*). The Alternative Regeneration Standards, when approved, will detail the young stand growth conditions (performance) required to meet managed yields.

Target Monitoring

Monitoring performance will be addressed through the Alternative Regeneration Standards and reporting requirements.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Progress on development and implementation of Alternative Regeneration Standards; and

- Summary reports as defined as part of these new standards, when implemented.

Acceptable Variance

N/A

Response

As part of the 2017 DFMP, the yield curves will be redeveloped as part of the Timber Supply Analysis component of the forecasting process.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

The managed stand yields are achieved through reforestation and vegetation management (when undertaken) operational process.

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2.2.6 Accepting Society's Responsibility for Sustainable Development

As described within the CSA Z809-02 standard, the VOITs associated with the CCFM SFM Criterion 6 (Accepting society's responsibility for sustainable development), are intended to "Society's responsibility for sustainable forest management requires that fair, equitable, and effective forest management decisions are made." (CSA 2002) Millar Western has included eight VOITs under this criterion.

VOIT 46 – Meet the Alberta government's current expectations for aboriginal consultation (6.1.1.1).

CCFM Criteria: 6. Accepting society's responsibility for sustainable development.
CSA SFM element: 6.1. Respect for Aboriginal forest values knowledge and uses.
Value: 6.1.1. Compliance with government regulations and policies.
Objective: 6.1.1.1. Implement Public involvement program.

Rationale

Millar Western recognizes and respects the traditional land-use areas of Alberta's aboriginal communities and values their input into its forest management activities.

Current Status

Millar Western has built a productive relationship with the Alexis Nakota Sioux Nation, with whom it signed a Forestry and Economic Development Agreement in 2004. Working with the Alberta government, however, the company has identified other aboriginal communities whose traditional lands may also overlap with the company's DFA and has initiated contact with them. These communities include the Lesser Slave Lake Regional Indian Council (LSLRIC), the Sturgeon Lake Cree Nation and the Alexander First Nation

Target

Consult, at the community level, with designated representatives of aboriginal communities defined by the Alberta government.

Target Supporting Information

The Aboriginal communities associated with this target and indicator are subject to revision by the Alberta government, but currently include:

- Alexis Nakota Sioux Nation;
- Lesser Slave Lake Regional Indian Council (LSLRIC);
- Sturgeon Lake Cree Nation; and
- Alexander First Nation.

As state in the Company's *DFMP/SFMP Implementation Communication Plan* (*Appendix V*), Millar Western will work with the Alberta government to identify aboriginal communities whose traditional lands may extend into its DFA and approach these communities to explore their interest in ongoing consultation. Where community interest is minimal to non-existent, the company will, at the least, add the elected leaders of these communities to its stakeholder

registry, to ensure they remain apprised of the company's SFM plans, activities and performance. Where community interest is high, Millar Western will establish a consultation process, taking direction from *The Government of Alberta's First Nations Consultation Policy on Land Management and Resource Development (Alberta 2005).*

Means of Achieving Target

Millar Western will achieve this target through implementing and adhering to the relevant components of the Company's *DFMP/SFMP Communication Implementation Plan (Appendix V)* and *The Government of Alberta's First Nations Consultation Policy on Land Management and Resource Development (May 16, 2005).*

Target Monitoring

This target will be monitored through tracking communications with Aboriginal communities in the Company's Communication Tracking Application.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- Updates to the aboriginal communities, and their specific contact individuals, that Millar Western communicates with as part of the planning process: and

- Summary of all Millar Western's initiatives directly focused at contacting and consulting with the aboriginal communities. All official communications will be summarized, and the key deliberations and achievements will be reported.

Acceptable Variance

No acceptable variance.

Response

If Millar Western doesn't achieve this target, they will review the shortcomings and determine if the Company needs to undertake actions to resolve them for the future. The Company will identify these instances and provide a rationale and the actions taken to resolve, and will provide a summary of these in the Annual and Stewardship Reports.

If Millar Western doesn't achieve this target, the Company will review and adjust their process where necessary.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard and *The Government of Alberta's First Nations Consultation Policy on Land Management and Resource Development (May 16, 2005).*

Operational and Strategic Plan Linkages

Aboriginal communication and input is a key component of Millar Western's strategic (i.e. Detailed Forest Management Plan) and operational (i.e. Annual Operating Plans) forest management planning processes. Stakeholder input is captured during plan development and considered for inclusion at the various planning levels.

VOIT 47 – Contract opportunities provided to the Alexis Nakota Sioux Nation (i.e. logging and silviculture) (6.1.2.1).

CCFM Criteria: 6. Accepting society's responsibility for sustainable development.

CSA SFM element: 6.1. Respect for Aboriginal forest values knowledge and uses.

Value: 6.1.2. Provide economic opportunities to Alexis Nakota Sioux Nation.

Objective: 6.1.2.1. Provide forest contract opportunities to the Alexis Nakota Sioux Nation on an annual basis as per FEDA.

Rationale

Alexis Nakota Sioux Nation (Alexis) is the only First Nations community with reserve lands surrounded by or embedded in the DFA. On May 26, 2004, Millar Western and Alexis entered into a formal agreement to establish a mutually rewarding relationship between the two parties, according to a set of agreed upon principles, terms and objectives.

The principles of the agreement are:

- Millar Western and Alexis will strive for mutual understanding and coexistence within the context of their respective cultures and activities;
- Alexis and Millar Western will strive to establish a cooperative atmosphere among its members and representatives in seeking to fulfill their respective objectives; and
- Millar Western and Alexis will strive to achieve open, direct and honest communication in all their mutual dealings.

One of the objectives of the agreement was the establishment of an Environmental Co-Stewardship Committee made up of equal representation from Alexis and Millar Western. The Co-Stewardship Committee is in place and is consulted regarding sustainable forest management decisions on the DFA.

Current Status

Millar Western currently offers contract opportunities to the Alexis, including harvesting, slash pile burning and tree planting.

Target

Provide contract opportunities to Alexis annually.

Target Supporting Information

The ECSC was created in 2004 under the Forestry and Economic Development Agreement (FEDA) dated May 26, 2004, which formalized the ongoing efforts of Millar Western and the Alexis to work together to ensure the responsible development of forest resources in areas where

the two parties have usage rights and traditional ties. Since its formation, the ECSC has proven an effective forum in which to raise and discuss land-use issues, as well as to pursue economic development opportunities.

In the FEDA, Millar Western commits to providing annual contracts to the Alexis for planting 500,000 trees and harvesting 50, 000 m^3 of timber.

Means of Achieving Target

Millar Western will achieve this target through communications within the ECSC.

Target Monitoring

This target will be monitored through reviewing it during meetings of the ECSC.

Reporting

In the Annual Report and Stewardship Report, Millar Western will report the following:

- The contract opportunities that the Company offered to the Alexis, which of these contracts the Alexis undertook and the status of each of the contracts.

Acceptable Variance

No acceptable variance.

Response

N/A

Legal / Policy Requirement

N/A

Operational and Strategic Plan Linkages

N/A

VOIT 48 – Number of Environmental Co-Stewardship Committee (ECSC) meetings (6.1.3.1).

CCFM Criteria: 6. Accepting society's responsibility for sustainable development.

CSA SFM element: 6.1. Respect for Aboriginal forest values knowledge and uses.

Value: 6.1.2. Sustain positive and productive working relationship with the Alexis Nakota Sioux Nation.

Objective: 6.1.3.1. Maintain existing consultations with Alexis Nakota Sioux Nation on forest management and economic development as per FEDA.

Rationale

The ECSC was created in 2004 under the Forestry and Economic Development Agreement (FEDA), which formalized the ongoing efforts of Millar Western and the Alexis Nakota Sioux Nation to work together to ensure the responsible development of forest resources in areas where the two parties have usage rights and traditional ties. Since its formation, the ECSC has proven an effective forum in which to raise and discuss land-use issues, as well as to pursue economic development opportunities. Regular and frequent ECSC meetings will ensure that a constructive dialogue is maintained, and that issues and opportunities are addressed on a regular basis, which will be key to meeting the objective of sustaining a positive and productive working relationship.

Current Status

The ECSC endeavors to meet every few months, but has no set target for number of meetings that must occur annually.

Target

Hold four (4) ECSC meetings annually.

Target Supporting Information

N/A

Means of Achieving Target

Millar Western will achieve this target through coordinating ECSC meetings.

Target Monitoring

ECSC meeting summaries will be captured in the Woodlands Communication Database.

Reporting

In the Annual Report and Stewardship Report, Millar Western will report the following:

- Updates to the ECSC membership; and

- Summary of the meeting dates and the general topics reviewed for each actual meeting and an overall summary of the key deliberations and achievements. In addition, Millar Western will also provide a summary of any scheduled meetings that did not occur, along with a rationale for re-scheduling or cancelling the meeting.

Acceptable Variance

The acceptable variance for the number of annual ECSC meetings is one (1).

Response

If the ECSC doesn't meet a minimum of three (3) times per year, Millar Western will provide a rationale in the Annual Report and Stewardship Reports.

Legal / Policy Requirement

N/A

Operational and Strategic Plan Linkages

ECSC deliberations will be directed by FEDA, with all deliberations and decisions documented and monitored by a third-party facilitator, to ensure the committee's directives applying to Millar Western are implemented at an operational level.

VOIT 49 – Meet expectations of Section 5 of CSA Z809-2002 – Public Participation Requirements (6.2.1.1)

CCFM Criteria: 6. Accepting society's responsibility for sustainable development.

CSA SFM element: 6.2. Public participation and information for decision-making.

Value: 6.2.1. Meaningful public involvement achieved.

Objective: 6.2.1.1. Implement public involvement program.

Rationale

For the privilege of operating on public lands, Millar Western recognizes that it has an obligation to involve the public in its Sustainable Forest Management activities and, toward that end, has developed a comprehensive public participation plan (refer to *Appendix V – DFMP/SFMP Implementation Communication Plan*) consistent with the requirements of the third-party audited certification standard CSA Z809-2002.

Current Status

Millar Western's public participation initiatives for the development and implementation of the 2007 DFMP were developed according to the expectations identified in Section 5 of CSA Z809-2002 (refer to *Appendix II- DFMP Development Communication Plan*, *Appendix III – Stakeholder Communication Summary* and *Appendix V – DFMP/SFMP Implementation Communication Plan*).

Target

Adhere to the communication initiatives that satisfy the expectations of Section 5 of CSA Z809-2002.

Target Supporting Information

The External Communications section of the *DFMP/SFMP Implementation Communication Plan* (*Appendix V*), describes how the Company will promote new, and maintain existing, communication initiatives with stakeholders. The initiatives associated with this indicator and target include:

- Development and maintenance of a stakeholder registry;
- Continuation of the existing Environmental Co-stewardship Committee;
- Implementation and maintenance of a permanent Public Advisory Committee;
- Implementation and maintenance of Harvesting and Silviculture Balancing groups;
- Holding open houses/public information sessions;

- Incorporating public participation component into corporate website;
- Implementation of 24/7 hotline;
- Development and distribution of Annual Environmental Performance Report;
- Communication through local media and press releases;
- Implementation of process for fulfilling public requests for information or capturing concerns; and
- Participation in Whitecourt Forest Interpretive Centre and Huestis Demonstration Forest.

Means of Achieving Target

Millar Western will achieve this target through adhering to the relevant components of the 2007 DMFP Communication Plan.

Target Monitoring

Millar Western will monitor their adherence to the relevant *DFMP/SFMP Implementation Communication Plan (Appendix V)* initiatives through internal updates. All significant communication initiatives will be captured in the Woodlands Communication Database.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report on the following:

- Summary the status of the implementation of the *DFMP/SFMP Implementation Communication Plan (Appendix V)* and a rationale for any deviation; and
- Summary of all consultation and communication activities.

Acceptable Variance

No acceptable variance.

Response

In instances where Millar Western does not adhere to the initiatives associated with this indicator and target, they will review these instances and determine if the Company needs to undertake actions to resolve them for the future. The Company will identify these instances and provide a rationale and the actions taken to resolve, and will provide a summary of these in the Annual and Stewardship Reports.

Legal / Policy Requirement

This VOIT is requirement of the Planning Standard.

Operational and Strategic Plan Linkages

Public communication and input is a key component of Millar Western's strategic (i.e. Detailed Forest Management Plan) and operational (i.e. Annual Operating Plans) forest management planning processes. Stakeholder input is captured during plan development and considered for inclusion at the various planning levels.

VOIT 50 – Contribution to, and implementation of, a management plan for Huestis Forest (6.2.2.1).

CCFM Criteria: 6. Accepting society's responsibility for sustainable development.

CSA SFM element: 6.2. Public participation and information for decision-making.

Value: 6.2.2. Increase knowledge of forest management operations.

Objective: 6.2.2.1. Work with various stakeholders to enhance the demonstration/educational value of the Huestis Forest.

Rationale

In addition to providing access to information about its forest management plans, Millar Western is committed to promoting greater understanding of forest characteristics and issues facing the forest industry as a whole, by providing the public with an opportunity to visit a working forest. The Huestis Forest serves as a valuable source of education, where the public can see, first-hand, native forest characteristics and the impacts and opportunities associated with managing forests for commercial uses including forestry and energy development and as well as for non-commercial values. Millar Western recognizes the value that the forest has in furthering the public's knowledge in not only forestry-related issues, but land-use issues in general.

Current Status

No formal multi-stakeholder steering committee or final management plan has been implemented specifically for the purposes of enhancing the demonstration/educational value of the Huestis Forest.

A draft management plan for the Huestis Forest has been prepared and is currently under review by interested stakeholders.

Target

Work with the Alberta government and other stakeholders, as a member of a multi-stakeholder steering committee, to develop and implement a management plan to enhance the demonstration and educational value of Huestis Forest, by December 31, 2008.

Target Supporting Information

The Huestis Demonstration Forest was created in 1988-89 and incorporated into Millar Western's FMA in 2005 (Figure 1). Since then, Millar Western has conducted maintenance, including regular debris clearing, road grading and upgrading of the original watercourse crossing, to make the road safe for public travel. To return the forest educational value, new signage is being planned. In an effort to update the interpretive experience, interested stakeholders have met and the Alberta government has prepared a draft plan (*Huestis Demonstration Forest – A Long-term Strategy*), which has been distributed among the initial stakeholders.

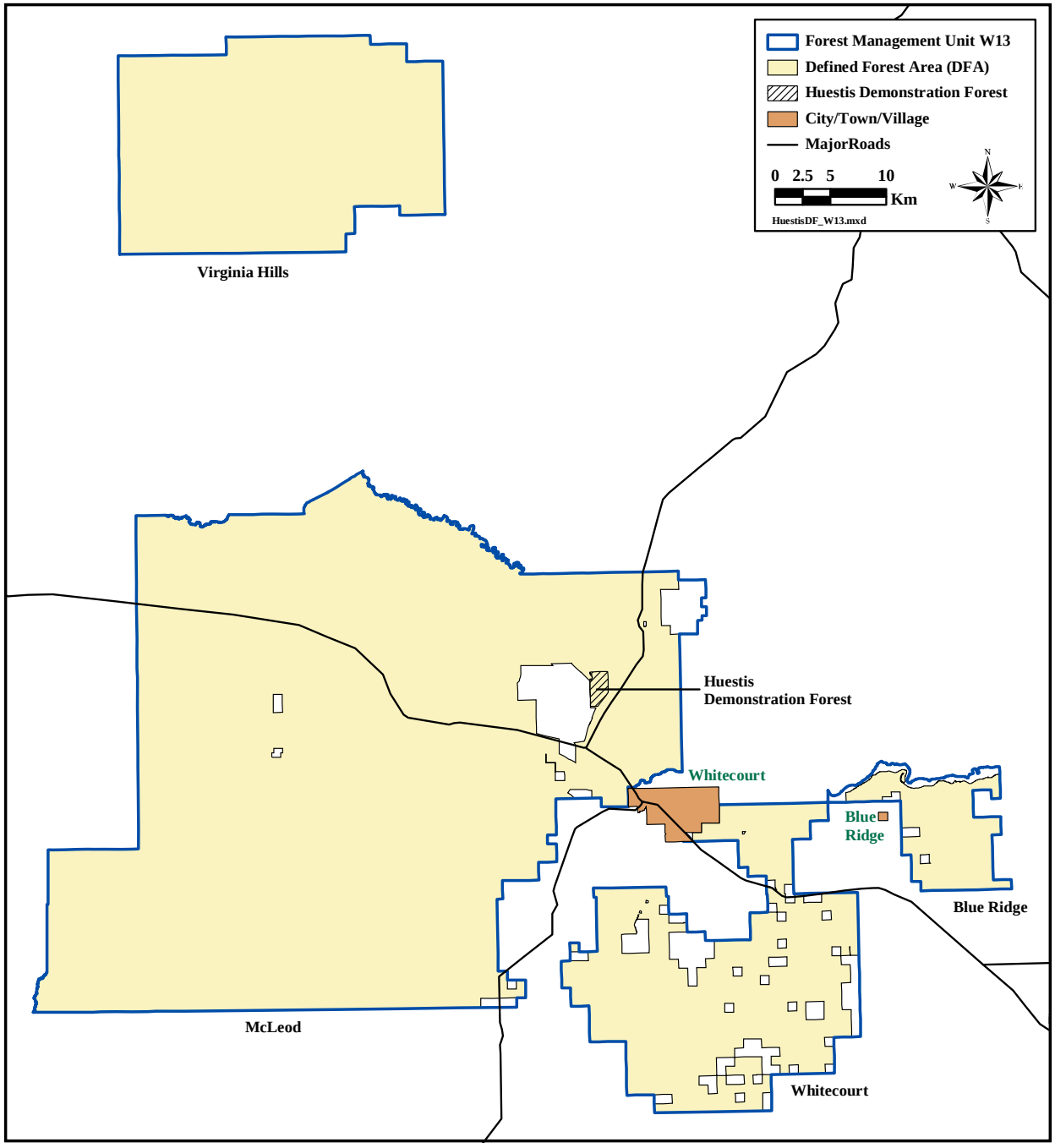

Figure 1. Location of Huestis Demonstration Forest.

Means of Achieving Target

Millar Western will achieve this target through designating one of their Woodlands Planning team members as the company representative to sit on the multi-stakeholder steering committee and to aid in the development and implementation of a management plan for the Huestis Demonstration Forest.

Target Monitoring

Millar Western will monitor the progress of the targets through communicating with the Alberta government and other stakeholders.

Reporting

In the Annual Report and Stewardship Report, Millar Western will report the following:

- The status of the creation of the multi-stakeholder steering committee and the development and implementation of the management plan; and
- Summary of the initiatives that Millar Western has undertaken in support of the Huestis Demonstration Forest.

Acceptable Variance

The acceptable variance for creating the multi-stakeholder steering committee is six (6) months (June 30, 2009).

The acceptable variance for developing and implementing the management plan is six (6) months (June 30, 2009).

Given that the project is to be governed by a multi-stakeholder board, more time may be required to establish the steering committee, achieve a shared vision and raise sufficient funds to bring the demonstration forest's renewal to fruition.

Response

If the target is not met within the acceptable variance periods, Millar Western will provide the reasons for this and will define a revised target date within the Annual and Stewardship Reports.

Legal / Policy Requirement

N/A

Operational and Strategic Plan Linkages

Development of the Huestis Demonstration Forest Management Plan is included in the *DFMP/SFMP Implementation Communication Plan (Appendix V)* and will be guided by a development plan, which will be ratified and overseen by its multi-stakeholder steering committee.

VOIT 51 – Development and incorporation of Virtual Open House into corporate website (6.3.1.1).

CCFM Criteria: 6. Accepting society's responsibility for sustainable development.

CSA SFM element: 6.3. Information for decision-making.

Value: 6.3.1. Provide measures to reach boarder public in regards to forest management information.

Objective: 6.3.1.1. Incorporate a virtual open house that will be available on the Millar Western Forest Products Ltd. Internet site.

Rationale

To help satisfy Section 5.5 of CSA Z809-02, which requires that organizations provide access to information about their DFA and about progress being made in implementation of the standard, the company will create a virtual open house on its external website.

Current Status

No virtual open house exists on Millar Western's Internet website. A virtual open house was developed and presented with the Company's in-person DFMP open houses in the spring of 2006.

Target

Develop and incorporate virtual open house into existing Millar Western Internet website by July 31, 2008.

Target Supporting Information

The website will become a primary repository of information relating to the company's DFA and include, among other documentation, a copy of the *DFMP/SFMP Implementation Communication Plan (Appendix V)*, DFMP and SFM plans, publications such as Annual and Stewardship Reports, and results of certification audits. An interactive site, the virtual open house will give visitors the opportunity to provide comments and suggestions, and to register as stakeholders, which will entitle them to notifications about SFM developments and participation opportunities. The virtual open house will be promoted through the media and other corporate publications. Understanding that not all stakeholders will have Internet access, the company will also promote the availability of hard copies of virtual open house materials and provide them on an as-requested basis.

The Virtual Open house will reside on the Company's corporate website:

www.millarwestern.com

Means of Achieving Target

Millar Western will achieve this target through implementing and adhering to the relevant initiative of the Company's *DFMP/SFMP Implementation Communication Plan* (*Appendix V*).

Target Monitoring

Millar Western will monitor the adherence to the relevant *DFMP/SFMP Implementation Communication Plan (Appendix V)* initiative through internal updates.

Reporting

In the Annual Report and Stewardship Report, Millar Western will report the following:

- Status of the implementation of the virtual open house; and
- Following implementation, a summary the number of hits to this component.

Acceptable Variance

The acceptable variance for developing and implementing the virtual open house is six (6) months (January 31, 2008).

Response

If the target is not met within the acceptable variance period, Millar Western will provide the reasons for this and will define a revised target date within the Annual and Stewardship Reports.

Legal / Policy Requirement

N/A

Operational and Strategic Plan Linkages

The creation of a virtual open house is one of the public participation strategies included in the *DFMP/SFMP Implementation Communication Plan (Appendix V).* Millar Western will also seek the advice of the Public Advisory Committee for ideas on how to maximize the tool's effectiveness.

VOIT 52 – Establishment of permanent Public Advisory Committee (PAC) and number of group meetings (6.3.2.1).

CCFM Criteria: 6. Accepting society's responsibility for sustainable development.

CSA SFM element: 6.4. Information for decision-making.

Value: 6.3.2. Maintain effective communication with a variety of stakeholders.

Objective: 6.4.2.1. Maintain a public advisory committee reflective of stakeholder concerns on the DFA.

Rationale

In keeping with the requirements of Section 5 of CSA Z809-02, which itemizes public participation requirements, Millar Western will create a permanent Public Advisory Committee (PAC), as one of a number of strategies to involve the public in its forest management activities. The PAC will comprise representatives of major stakeholder groups and meet regularly to identify and monitor VOITs, review operating plans, discuss/resolve issues relevant to sustainable forest management, and advise on communications with the broader public.

Current Status

Millar Western currently seeks stakeholder/public input into its activities through formal committees (i.e. ECSC, Environmental Advisory Committee), open houses and direct stakeholder contacts. It formed a temporary PPG during the development of the 2007 DFMP, which contributed significantly to the development of the VOITs (refer to *Appendix IV – Public Participation Group Report*).

Target

Establish Public Advisory Committee (PAC) by December 31, 2007, and hold a minimum of four (4) meetings annually, starting from the date that the group is established.

Target Supporting Information

The creation of the PAC, along with the other public participation initiatives are summarized in the *DFMP/SFMP Implementation Communication Plan* (*Appendix V*).

Means of Achieving Target

Millar Western will achieve this target through implementing and adhering to the relevant initiatives of the Company's *DFMP/SFMP Implementation Communication Plan (Appendix V).*

Target Monitoring

Millar Western will monitor the adherence to the relevant *DFMP/SFMP Implementation Communication Plan (Appendix V)* through internal updates. All communication initiatives will be captured in the Woodlands Communication Database.

Reporting

In the Annual Report and Stewardship Report, Millar Western will report the following:

- Status of the establishment of the PAC;
- Membership, meeting dates and topics covered at each meeting.

On the Company's virtual open house, each of the PAC meeting minutes will be summarized and posted.

Acceptable Variance

No acceptable variance.

Response

In instances where Millar Western does not adhere to the initiatives associated with this indicator and target, they will review these instances and determine if the Company needs to undertake actions to resolve them for the future. The Company will identify these instances and provide a rationale and the actions taken to resolve, and will provide a summary of these in the Annual and Stewardship Report.

Legal / Policy Requirement

N/A

Operational and Strategic Plan Linkages

The creation of a permanent PAC is one of the public participation strategies included in the *DFMP/SFMP Implementation Communication Plan (Appendix V)*. The PAC process will be guided by basic operating rules, which will be developed and ratified by PAC members.

VOIT 53 – Implementation of a 24-hour toll-free telephone hotline (6.3.3.1)

CCFM Criteria: 6. Accepting society's responsibility for sustainable development.

CSA SFM element: 6.3. Information for decision-making.

Value: 6.3.3. Provide measures to reach broader public in regards to forest management information.

Objective: 6.3.3.1. Develop 24-hour hotline for public comments regarding forestry issues.

Rationale

In addition to the development of a virtual open house and permanent Public Advisory Committee (PAC), Millar Western will, as part of its public participation plan, establish a toll-free, 24-hour telephone hotline. This tool will enable the public to voice comments, questions and concerns about sustainable forest management at a time convenient to them and without cost. The company will commit to provide an initial response within 48 hours and to promoting the hotline through media advertisements and on signage in areas where it is active.

Current Status

Telephone contact with the company's Woodlands group is currently restricted to normal business hours (Monday to Friday, 8:00 am to 4:30 pm).

Target

Launch 24-hour toll-free hotline by February 29, 2008.

Target Supporting Information

The creation and launching of the 24-hour toll-free hotline, along with the other public participation initiatives are summarized in the *DFMP/SFMP Implementation Communication Plan* (*Appendix V*).

Means of Achieving Target

Millar Western will achieve this target through implementing and adhering to the relevant initiatives of the Company's *DFMP/SFMP Implementation Communication Plan* (*Appendix V*).

Target Monitoring

Millar Western will monitor the adherence to the relevant *DFMP/SFMP Implementation Communication Plan (Appendix V)* components through internal updates. All communication initiatives will be captured in the Communication Tracking Application.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- The status of the 24-hour hotline implementation.

Acceptable Variance

The acceptable variance for meeting this target is six (6) months (August 31, 2008)

Response

In instances where Millar Western does not adhere to the initiatives associated with this indicator and target, they will review these instances and determine if the Company needs to undertake actions to resolve them for the future. The Company will identify these instances and provide a rationale and the actions taken to resolve, and will provide a summary of these in the Annual and Stewardship Reports.

Legal / Policy Requirement

N/A

Operational and Strategic Plan Linkages

The 24-hour hotline is one of the public participation strategies included in the *DFMP/SFMP Implementation Communication Plan (Appendix V).*

3. Company Commitments

Company Commitments are those, developed independently by Millar Western, that the Company is aiming to fulfill during the 10-year period of the 2007 DFMP. These commitments are not related to the VOITs and are outside of the scope of the Planning Standard and the CSA Z809-02 standard.

The Company Commitments contained within this section are logically arranged according to the functional role under which they fall within the Whitecourt Woodlands group as follows:

- Forest Management Planning
- Forest Operations
- Silviculture
- Growth and Yield
- Research

The following headings are addressed for each Company Commitment, with the following purpose:

Commitment

- Provides a clear statement of what the Company is committed to achieving.

Rationale

- Provides a justification for undertaking the initiative that will meet the commitment.

Timeline

- Defines the timelines for achieving the commitment.

Reporting

- Defines what will be reported and when it will be reported (i.e. Annual Report, Stewardship Report).

3.1 Company Commitment Summary Table

Table 34 provides a summary of Millar Western's 2007 DFMP Company Commitments. This table is only provided as a reference, as each commitment is more thoroughly described in Section 3.2.

Table 34. Company Commitment Summary Table.

ID	Commitment	Timeline	Reporting
Forest Management Planning			
1	Reconcile SHS, following DFMP approval.	Complete reconcilation by December 31, 2007.	Stewardship Report: - Summary of the process used and the resulting changes.
2	Re-run BAP analysis on SHS submitted with 2007 DFMP.	Submit to Alberta gov't. by November 30, 2008	2007 DFMP Addendum to Alberta gov't.: - Summary of results and interpretation. Annual Report: - Condensed version of report to Alberta gov't.; - Summary of any additional analysis. Stewardship Report: - Same as Annual Report.
3	Maintain DFA Harvest Planning Committee	Ongoing	Annual Report: - Summary of committee's composition, stucture and key accomplishments. Stewarship Report: - Same as Annual Report.
4	Develop and implement Industrial Salvage tracking process.	Submit to Alberta gov't. by October 31, 2008.	Annual Report: - Summary of progress in developing, Alberta gov't's review and approval, and implementation of process. Stewardship Report: - Same as Annual Report.
Forest Operations			
5	Revise FMA Operating Ground Rules.	Implement revised OGRs by April 30, 2008	Annual Report: - Summary of progress of OGR revisions and implementation. Stewardship Report: - Same as Annual Report.
Silviculture			
6	Maintain DFA Silviculture Committee.	Ongoing.	Annual Report: - Summary of committee's composition, stucture and key accomplishments. Stewarship Report: - Same as Annual Report.
7	Develop Alternative Regeneration Standards (ARS).	Begin development of ARS by November 30, 2008	Annual Report: - Summary of progress on development, approval and implementation of ARS. Stewardship Report: - Same as Annual Report.
8	Develop specific regeneration strategies to mitigate insect and disease infestations.	Initiate development by December 31, 2008.	Annual Report: - Summary of progress on development and implementation of strategies. Stewardship Report: - Same as Annual Report.
Growth and Yield			
9	Develop and secure Alberta gov't. approval of a wider suite of managed stand yield curves.	Secure approval of data collection program acceptable to Alberta gov't. by February 29, 2008.	Annual Report: - Summary of the progress in development, approval and incorporation of curves into forest management planning initiatives. Stewardship Report: - Same as Annual Report.
10	Implement growth and yield initiatives.	As defined in Growth and Yield Plan (Appendix VIII).	Annual Report: - Summary of implementation of each of the programs under the G & Y Plan; - Status of the submission / review / approval of the revised G & Y Plan; - Summary of any changes to the G & Y Plan from annual internal review. Stewardship Report: - Same as Annual Report.

ID	Commitment	Timeline	Reporting
	Research		
11	Investigate new technologies for developing forest and vegetation inventory for DFA.	Ongoing with further investigations completed before the end of 2011.	Stewardship Report: - Summary of any planned inventory investigations; - Summary of the results of any completed inventory investigations.
12	Develop and implement operational risk rating system to provide guidance in determining environmental conditions in which forest operations can be conducted in an environmentally sound manner.	Implement by October 31, 2008.	Annual Report: - Summary of the progress in development and implementation of operational assessment tools and techniques. Stewardship Report: - Same as Annual Report.
13	Investigate the need for BAP SHEs and HSMs validation and refinement.	Implement investigation and refinements by November 30, 2008.	Stewardship Report: - Summary of investigative and refinement initiatives planned or undertaken and the progress of each; - Summary of the findings and any recommendations for future refinement or incorporation into planning or operational activities.

3.2 Company Commitment Detailed Description

This section provides detailed information for each of Millar Western's 2007 DFMP Company Commitments.

3.2.1 Forest Management Planning

The following section contains the Company Commitments that logically fall into the initiatives of Millar Western's Forest Management Planning group. Millar Western has identified four commitments that are the responsibility of those performing forest management planning.

Company Commitment 1 – Reconcile SHS, following DFMP approval.

Commitment

Following the Alberta government's review and approval of the 2007 - 2016 DFMP, Millar Western will update the harvest blocks within the spatial harvest sequence (SHS) to reflect any activity that may have occurred since the SHS development and DFMP approval. This updated SHS and landbase will be used as the basis for DFMP implementation and future comparisons and reporting.

Rationale

Due to the timelines in selecting an effective date of a DFMP and the actual period the DFMP is going to be completed, there is a high likelihood that the information will become outdated by the time the plan is completed and implemented. Of particular concern are the proposed harvest dates of blocks that were input into the respective landbase files for the periods of 2004/05, 2005/06 and 2006/07. Some of these blocks may or may not have been harvested as originally predicted when developing the SHS, as there is potential for deviation from what was planned and what actually happened on the ground during this time.

Millar Western is committed to reporting, directly and indirectly, the variance between what was sequenced for harvest in the SHS and what was actually harvested. The company wishes to minimize potential variation at the start of the DFMP for both the SHS and the 2007 landbase condition.

The intent of updating the SHS is to avoid accumulating significant variation, for which the maximum allowable, by compartment, is 20%, before the DFMP is even implemented. Millar Western will minimize the revisions and limit them to compartments where there are significant changes. No new line work will be incorporated into the updating process.

The small changes that are under consideration here will not noticeably impact any of the landscape metrics or the PFMS. Compartment specific summaries of forested condition are more likely to be affected.

Timeline

Revisions will be done only once and are to be completed by December 31, 2007.

Reporting

In the Stewardship Report, Millar Western will report the following:

- Summary of the process used and resulting changes.

Company Commitment 2 – Re-run BAP analysis on SHS submitted with 2007 DFMP.

Commitment

Following the Alberta government's approval of the 2007 - 2016 DFMP, Millar Western will re-run the Biodiversity Assessment Project (BAP) analysis, and update the DFMP to reflect the revised outcomes.

Rationale

The BAP assessment included in the original submission of the DFMP is not based on the SHS submitted with the 2007 - 2016 DFMP, but rather, on an earlier scenario. The BAP analysis could not be run on the final SHS due to the length of time (approximately four months) and resources required.

The primary differences between the SHS analysed by BAP and that submitted with the 2007 - 2016 DFMP are changes in the compartment sequence and individual stands within the SHS as well as some timber supply yield curve changes. Overall, only slight changes are expected in the BAP re-analysis; however, there is a chance that some of the biodiversity elements will be less favourable. If this is the case, Millar Western will assemble a team to review these elements and develop recommendations on how to resolve them.

Timeline

By November 30, 2008, Millar Western and the BAP IAG will re-run the BAP analysis and incorporate the results into the DFMP.

Reporting

Millar Western will prepare and submit, to the Alberta government, an addendum to the 2007 - 2016 DFMP, containing the updated BAP analysis results, by November 30, 2008.

For continuity in reporting, in the Annual Report and the Stewardship Report, Millar Western will report the following:

- A condensed version of report provided to the Alberta government; and
- A summary of the progress on any additional analysis.

Company Commitment 3 – Maintain DFA Harvest Planning Committee

Commitment

Maintain DFA Harvest Planning Committee (DFAHPC) (formerly, Spatial Harvest Sequence Group) to develop, implement and adhere to processes related to operational harvest scheduling and reporting (refer to *Appendix XVI – Terms of Reference – DFA Harvest Planning Committee*).

Rationale

During the development of the 2007 - 2016 DFMP, and specifically that of the spatial harvest sequence (SHS), Millar Western convened a committee known as the SHS Group. This group consisted of forest management planners representing the company and representatives of the other forestry operators on the DFA and the Alberta government. The primary responsibility of this group was to collectively develop the SHS for the 2007 2016 DFMP.

During the implementation of the W11 Preliminary Forest Management Plan's SHS, and again while developing the 2007 - 2016 DFMP SHS, Millar Western recognized the need to formalize and maintain this group, to implement the SHS and develop, implement and champion the compliance to processes related to harvest scheduling and reporting. The W11 experience proved that an ongoing committee, as described above, can most effectively deal with issues surrounding the achievement of both the annual and the 10-year specific targets for the DFA.

In summary, the DFA Harvest Planning Committee's responsibilities, as described in its Terms of Reference, are as follows:

- To review and develop procedures to adhere to all 2007 DFMP VOITs and Company Commitments;
- To refine the process for allocation (and re-allocation) of area within the SHS, among operators;
- To refine the operator-specific allocation of polygons within the SHS;
- To develop protocols for timely data exchanges and reporting among the forestry operators to meet DFMP reporting requirements (i.e. structure retention, downed woody debris, projected vs actual deliveries, road construction and rehabilitation); and
- To provide direction on harvest and planning aspects for new Operating Ground Rules.

The DFA Harvest Planning Committee with work closely with the DFA Silviculture Committee to ensure continuity in the planning, scheduling and regeneration assignment processes.

Timeline

The Defined Forest Area Harvest Planning Committee (DFAHPC) has been established. Maintenance of the group will be ongoing over the 10-year period of the 2007 - 2016 DFMP.

Reporting

In the Annual Report and the Stewardship Reports, Millar Western will report on the following:

- Summary of the committee's composition and structure and its key accomplishments.

Company Commitment 4 – Develop and implement Industrial Salvage tracking process.

Commitment

Develop and implement an industrial salvage tracking and reporting process based on the intent described in Section 7.3.1 of *Chapter 5 – Forecasting and the Preferred Forest Management Scenario*.

Rationale

The Alberta government has requested that FMA holders determine, track and report the impacts of non-forestry industrial activities on the landbase, mill deliveries, AAC chargeability and AAC. This request stems from the Alberta government's desire to capture the AAC consequences of all non-modelled disturbances and to ensure the total disturbed volume does not exceed that modelled in the timber supply.

As with all FMA holders, Millar Western has no control over the issuance of other industrial non-forestry dispositions on the DFA, the destination of timber salvaged from these dispositions, or the fate of non-salvaged timber. These are areas of concern for Millar Western and the other quota holders and is problematic for cut control and timing of wood deliveries. The outcome for affected companies is a lack of control combined with extra costs associated with reporting on none-core forest management activities.

To address these concerns, Millar Western is proposing a new industrial salvage approach to replace the Alberta government's current approach. This new approach, which is outlined in Section 7.3.1 of *Chapter 5 – Forecasting and the Preferred Forest Management Scenario*, would lead to the development of an industrial tracking process to be implemented upon the Alberta government's approval.

Timeline

An industrial salvage tracking process will be developed, documented and submitted to the Alberta government for approval by October 31, 2008. The implementation of the process will follow this approval.

Reporting

In the Annual Report and the 2007 – 2011 Stewardship Report, Millar Western will report the following:

- Summary of the progress made in developing, reviewing, and approving and, if approved, implementing Millar Western's proposed industrial salvage process.

3.2.2 Forest Operations

The following section contains the Company Commitments that logically fall into the initiatives of Millar Western's Forest Operations group. Millar Western has identified one commitment that is the responsibility of those performing forest operations activities.

Company Commitment 5 – Revise FMA Operating Ground Rules.

Commitment

Following the Alberta government's approval of the 2007 - 2016 DFMP, Millar Western will begin the process of revising the FMA Operating Ground Rules (OGR), seeking to achieve mutual agreement with the Alberta government and the other forestry operators on the DFA.

Rationale

OGRs are one of the key implementation mechanisms of a DFMP in that they define how operational tasks will be performed. Some of the assumptions used in the preparation of the PFMS rely on operational issues being performed in a particular manner; therefore, it is critical that the OGRs are consistent with the DFMP.

Examples of company and DFMP specific OGRs that will require revision through mutual agreement include:

- Coarse/downed debris management;
- Residual green/structure retention;
- Riparian buffer modification under research program;
- Planning process; and
- SHS variance tracking and reporting.

Timeline

Following the Alberta government's approval of the 2007 – 2106 DFMP, Millar Western will convene an Operating Ground Rules Revision Committee, consisting of representatives from Millar Western, the other DFA forestry operators and the Alberta government. This committee will develop a schedule for revising the OGRs, with a target completion date of April 30, 2008.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report on the following:

- Summary of the progress made on revising and implementing the OGRs.

3.2.3 Silviculture

The following section contains the Company Commitments that logically fall into the initiatives of Millar Western's Forest Silviculture group. Millar Western has identified three commitments that are the responsibility of those performing silviculture activities.

Company Commitment 6 – Maintain DFA Silviculture Committee.

Commitment

Maintain DFA Silviculture Committee (formerly, Silviculture Subgroup) to develop, implement and adhere to processes related to strategic and operational silviculture undertakings on the DFA (refer to *Appendix XVII – Terms of Reference – DFA Silviculture Committee*).

Rationale

During the development of the 2007 – 2016 DFMP, the DFA Silviculture Committee was convened to develop silviculture components for the DFMP that meet the requirements of the Planning Standard and that can be implemented in an economically feasible manner.

To effectively and efficiently implement the silviculture related components during the 2007 – 2016 DFMP period, the company will require a formal, permanent committee, representing all forestry operators on the DFA.

In summary, the DFA Silviculture Committee's responsibilities (as described in their Terms of Reference) are as follows:

- To review and develop procedures to adhere to all 2007 – 2016 DFMP VOITs and Company Commitments;
- To refine the process to adjust DFMP regeneration targets to align with actual harvest areas and company-specific adjusted targets;
- To develop protocols for timely data exchanges and reporting among the forestry operators to meet DFMP reporting requirements (i.e. survey results, regeneration strata declarations relative to targets);
- To undertake block-specific balancing and treatments to meet DFMP targets (i.e. DFMP regeneration targets);
- To provide input into development of Alternative Regeneration Standards; and
- To provide direction on silviculture aspects for new Operating Ground Rules

The DFA Silviculture Committee will work closely with the DFA Harvest Planning Committee to ensure continuity in the planning, scheduling and regeneration assignment processes.

Timeline

The DFA Silviculture Committee has been established. Maintenance of the group will be ongoing over the 10-year period of the 2007 – 2016 DFMP.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report on the following:

- Summary of the committee's composition, structure and key accomplishments.

Company Commitment 7 – Develop Alternative Regeneration Standards (ARS).

Commitment

Develop Alternative Regeneration Standards (ARS) specific to the DFA to replace the generic Provincial Regeneration Standards.

Rationale

After approval of the 1997 DFMP, Millar Western invested significant time and resources developing an alternative set of regeneration standards, known as Model II. After the submission of the proposed Model II to the Alberta government in 2003, which were rejected, both parties agreed that Millar Western would initiate the development of a new ARS process once the 2007-2016 DFMP was approved. In the meantime, the Alberta government proposed a new process to develop simplified DFMP regeneration standards, to tide the company over until the new ARS was approved.

The company re-submitted proposed standards to the Alberta government on December 15, 2005. Despite numerous resubmissions and discussions, Millar Western is still without approved DFMP regeneration standards for its FMA. Millar Western is committed to developing acceptable ARS and will begin developing a revised version after the Alberta government creates development protocols that can be used as a model for ARS development.

Timeline

Millar Western will begin negotiating ARS development following the approval of the 2007 – 2016 DFMP. The company's goal is to begin the development by November 30, 2008.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report on the following:

- Summary of the progress on the development, approval and implementation of ARS.

Company Commitment 8 – Develop specific regeneration strategies to mitigate insect and disease infestations.

Commitment

Develop and implement regeneration treatments that reduce the risk of insect infestation and disease loss while maintaining the direction from higher level plans.

Rationale

Because the mountain pine beetle (MPB) poses the risk of unprecedented timber losses in Millar Western's FMA area, much of the 2007 – 2016 DFMP development efforts focused upon MPB loss mitigation. However, in simply reducing the susceptibility of the forest to MPB, care must be exercised to ensure that infestation risks are not simply transferred to other tree species. The following insects and diseases are examples of those with potential to cause serious loss and must be considered in regeneration strategies:

- Mountain pine beetle (*Dendroctonus ponderosae*) – attacks lodgepole and Jack pine;
- Spruce budworm (*Choristoneura fumiferana*) – attacks white spruce, balsam fir;
- Large aspen tortrix (*Choristoneura conflictana*) – attacks deciduous species;
- Forest tent caterpillar (*Malacosoma disstria*) – attacks deciduous species; and
- Armillaria root disease (*Armillaria spp.*) – attacks conifer species.

Following current strata-based regeneration practices, the MPB situation will require a large amount of pure pine harvesting and regeneration. This will result in an associated increase in regeneration costs at a time of extreme economic stress for the forest industry. To meet its regeneration obligations, Millar Western will look at ways to reduce regeneration costs by, for example, increasing its reliance on natural regeneration; however, it will only proceed after considering the impact of such moves on other DFMP objectives.

Millar Western's regeneration strategies will address risks from a range of species to ensure the renewal of a healthy, vigorous forest. Regeneration strategies will be pro-active, linked to the Generic Establishment Regimes (refer to *Appendix IX – Silviculture Generic Establishment Regimes*) and will address the surge in regeneration required to respond to the current MPB infestation.

Timeline

Initiate the process of developing and implementing specific strategies by December 31, 2008.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report on the following:

- Summary of the progress on the development and implementation of the strategies to mitigate damage due to insect and disease infestations.

3.2.4 Growth and Yield

The following section contains the Company Commitments that logically fall into the initiatives of Millar Western's Growth and Yield group. Millar Western has identified two commitments that are the responsibility of those performing growth and yield activities.

Company Commitment 9 – Develop and secure the Alberta government's approval of a wider-suite of managed stand yield curves.

Commitment

Develop a process acceptable to the Alberta government for developing a wider suite of managed-stand yields from curves reflecting ground-level treatments to higher-yield curves that reflect Millar Western's regeneration achievements, for application in the 2017 – 2026 DFMP.

Develop and implement a field monitoring program acceptable to the Alberta government to collect the information required to support the new yield curves.

Develop new managed yield curves acceptable to the Alberta government that for application in the 2017 – 2026 DFMP's timber supply analysis and AAC.

Programs will be added to the Growth and Yield Plan as appropriate.

Rationale

In 1997, Millar Western's strategic forest management direction was to double the yields from regenerated stands compared to natural stands. In addition, the company wished to mitigate the AAC dropdown that would occur based on the standing volume yield curves that were used as the basis for the managed curves in the 2007 - 2016 DFMP. Millar Western believes the current regenerated stands are growing at a higher rate than is currently predicted and wants to determine a more appropriate set of managed-stand yield curves for these stands.

The company believes that the improved silviculture practises implemented over the past decade have increased yields in the regenerated stands already established. What is currently missing is the data acceptable to the government that demonstrates the increase in regenerated yields. Data collection programs acceptable to the government are required to obtain the data in a timely matter for use in the 2017 – 2026 DFMP.

Timeline

New managed stand yield curves must be completed and accepted by the Alberta government for use in the 2017 - 2016 DFMP. A data collection program to gather regeneration data that is acceptable to the government for use in yield curve construction must approved by February 29, 2008, for implementation in the 2008 field season.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report on the following:

- Summary of the progress in the development and approval of a wider suite of managed-stand yield curves, and their incorporation into forest management planning initiatives.

Company Commitment 10 – Implement growth and yield initiatives.

Commitment

Implement the Growth and Yield Plan initiatives identified in Table 35. Refer to the *Growth and Yield Plan* (*Appendix VIII*).

Table 35. Summary of commitments within the Growth and Yield Plan.

Program	Description
Forest Inventory	Inventory as required to meet Alberta Forest Management Planning Standards.
TSPs	Develop a volume sampling plan to assess whether new TSPs are required for yield curve development prior to the 2017-2026 DFMP.
Regeneration Surveys	Carry out ASRD regeneration surveys (Establishment and Performance) on each cutblock as required by ASRD, until Alternative Regeneration Standards are developed and approved.
Permanent Sample Plot Program	Establish remaining grid-based PSPs by the end of the 2007-2016 planning period; as Standard PSPs are harvested, replace with Plantation PSPs, with a minimum of 10 SPSPs harvested over the 2007-2016 planning period; establish 1 EFM PSP per 250 ha thinned.
Regenerating Stand PSP Initiative	Establish 100 Plantation PSPs in regenerating stands on a stratified basis over the next five years.
In-Block Roads	Collect additional IBR data during ASRD regeneration surveys until 2007; establish of 15 IBR PSP plot pairs over the next five years.
Tree Improvement	Obtain STIA (Standards for Tree Improvement in Alberta) program approval by February 2008; continue participation in progeny trial data collection and analysis; develop a protocol for PSP data collection for inclusion in the February 2008 G&Y plan resubmission.
Mortality and Ingress	Establish 24 new MI PSPs (8 blocks with 3 PSPs per block) every year until 2012 (10 year establishment period).
Data Archiving	Within the next five years, complete database and archiving protocols for cataloguing and storing all growth and yield information in a single locale.

A revised Growth and Yield Plan, with changes to reflect requirements of the Terms of Reference for the 2017 - 2026 DFMP, will be submitted to the Alberta government by February 1, 2008, for review and approval. The Growth and Yield Plan will be reviewed on an annual basis and updated as required; all revisions will be submitted to the government for review and approval.

Rationale

Growth and yield data are critical to long-term strategic planning and to supporting new management regimes under changing conditions. The Growth and Yield Plan outlines the data collection requirements in order to meet both short- and long-term needs. Following the Growth and Yield Plan is essential to providing data required for development of the 2017 – 2026 DFMP, as well as data needs in the future.

Timeline

The timings for the individual programs within the *Growth and Yield Plan* are identified in *Appendix VIII*.

Millar Western will submit a revised Growth and Yield Plan to the Alberta government for review by February 1, 2008.

The company will internally review and, if necessary, update the Growth and Yield Plan by January 31 of each year.

Reporting

In the Annual Report and Stewardship Report, Millar Western will report on the following:

- Summary of the implementation and progress of each of the programs under the Growth and Yield Plan;
- Status of the submission/review/approval of the revised Growth and Yield Plan; and
- Summary of any changes to the Growth and Yield Plan resulting from the annual internal review process.

3.2.5 Research

The following section contains the Company Commitments that logically fall into the initiatives of Millar Western's Research group. Millar Western has identified four commitments that are the responsibility of those performing research activities.

Company Commitment 11 – Investigate new technologies for developing forest and vegetation inventory for DFA.

Commitment

Investigate new technologies for developing forest and vegetation inventory for the DFA.

Rationale

Millar Western is required to complete a new forest inventory to use in the development of its DFMPs, which are prepared and submitted every 10 years. The current method for completing these inventories is based on aerial photography interpretation on a stand basis to the Alberta Vegetation Inventory standards in effect at the time.

Emerging technologies such as Light Detection and Ranging (LiDAR) and high-resolution satellite imagery offer some exciting prospects for developing forest inventories. In contrast to the stand-based photo-interpretation, these two new technologies permit the development of an individual tree-based inventory. This increase in precision has the potential to significantly improve the harvest planning, growth and yield forecasting and silviculture monitoring. In addition, the high-resolution digital elevation models generated from LiDAR can serve as a key input in the development of a biophysical site productivity assessment.

Timeline

Millar Western has already initiated one LiDAR trial on the DFA, and will be furthering this and other investigations over the first five years of the 10-year DFMP.

Reporting

In the Stewardship Report, Millar Western will report on the following:

- Summary of any planned inventory investigations; and
- Summary of the results of any completed inventory investigations.

Company Commitment 12 – Develop and implement operational risk rating system to provide guidance in determining environmental conditions in which forest operations can be conducted in an environmentally sound manner.

Commitment

Develop and implement a risk rating system to provide guidance in determining environmental conditions under which operations can be conducted in the harvest of timber and the construction, maintenance and reclamation of forest roads and crossings in an environmentally sound manner.

This risk rating system will used for not only planned operations but, also in a monitoring role for existing infrastructure, such as roads and crossings.

Rationale

Forestry operations, such as harvesting, site preparation, and the construction, maintenance and reclamation of roads and watercourse crossings, have the potential to cause significant damage to soils and water resources. Of particular concern are soil compaction, rutting, erosion and mass wasting that, in addition to damaging the soils' potential for supporting vegetation, also poses the risk of decreasing water quality and increasing water yields.

During the VOIT review process, the Public Participation Group (PPG) was formed to provide input into the 2007 – 2016 DFMP, expressed concern over operational impacts on soil and water resources. Millar Western feels that developing and implementing a system that will further reduce the likelihood of these negative impacts will address the concerns of the PPG and prove beneficial to all stakeholders.

Timeline

The operational risk rating system will be developed and implemented by December 31, 2008.

Reporting

In the Annual Report and the Stewardship Report, Millar Western will report the following:

- Summary of the progress in developing and implementing the operational assessment tools/techniques for assessing operability under various environmental conditions.

Company Commitment 13 – Investigate the need for BAP SHEs and HSMs validation and refinement.

Commitment

Following the BAP analysis completed on the approved 2007 – 2016 DFMP Preferred Forest Management Scenario (PFMS), undertake investigations to assess validation and refinement requirements for the Special Habitat Elements (SHEs) and Habitat Supply Models (HSMs).

Rationale

As described in Company Commitment 2, the BAP analysis will be re-run on the final approved 2007 – 2016 DFMP PFMS The is required due to the fact that the BAP IAG analyzed and reported on an earlier PFMS, one that differs slightly from that which was submitted as part of the 2007 – 2016 DFMP. Millar Western expects that there will be some differences between the results for the scenarios, but that they will be minor.

Millar Western's investigation and refinement of the BAP SHEs and HSMs will be done to confirm the extent to which the BAP projections reflect the actual on-the-ground circumstances. In-turn, this information can be used in refining strategic and/or operational planning and/or operational activities.

Timeline

The implementation of BAP SHE and HSM investigations and refinements will commence by November 30, 2009.

Responsibility

Millar Western's Silviculture Department will be responsible for coordinating the completion of the BAP SHE and HSM investigations and refinements.

Reporting

In the Stewardship Report, Millar Western will report on the following:

- Summary of the investigative and refinement initiatives planned or undertaken, and the progress of each;

- Summary of the findings and any recommendations for future refinement or incorporation into planning or operational activities.

4. Supplemental Information

This section provides additional details and explanatory notes related to some of the VOITs and the Company Commitments. It is not meant to replace the information contained within other chapters or appendices of the 2007 – 2016 DFMP but, rather, to provide a summary of critical terms and concepts in one location, for readers' convenience.

4.1 Seral Stages

As defined by the Alberta government, a seral stage is:

> *" A stage in forest succession. A series of plant community conditions that develop during ecological succession from a major disturbance to the climax stage. Most common characteristics /classifications include tree species and age."*

To support the development of Millar Western's PFMS, and based on the BAP IAG's assessments and recommendations, six seral stages were identified: 1) Clearing; 2) Regenerated; 3) Young; 4) Immature; 5) Mature; and 6) Old (refer to Table 36). These seral stages were developed for each of the thirteen BAP Strata on the landbase. BAP Strata are groupings of forested stands, based on their similarities in terms of biological attributes, their proportion across the landscape and biodiversity specialists' knowledge. The BAP IAG used the Permanent Sample Plot and Temporary Sample Plot data to divide each BAP strata into seral stages based on the presence of indicator attributes for each seral stage. Age ranges were then assigned for each seral stage and liked to the stand breakup assumptions (Table 36). BAP strata were used in all biodiversity reporting and analysis.

Table 36. Broad cover group, species strata and BAP strata seral stage classification.

BCG	Species Strata	BAP Strata	Age range by seral stage (yrs)					
			Clearing	Regenerated	Young	Immature	Mature	Old
D	AW	AW	< 2	2 - 11	12 - 35	36 - 70	71 - 130	131 - 150
		PB	< 2	2 - 11	12 - 35	36 - 70	71 - 140	141 - 150
	BW	BW	< 3	3 - 11	12 - 30	31 - 70	71 - 100	101 - 110
DC	AP	AW_PL	< 2	2 - 13	14 - 35	36 - 65	66 - 130	131 - 160
	AS	AW_SWSB	< 4	4 - 14	15 - 45	46 - 70	71 - 140	141 - 180
		PB_CON	< 4	4 - 14	15 - 40	41 - 70	71 - 150	151 - 180
CD	PA	PL_DEC	< 2	2 - 11	12 - 40	41 - 75	76 - 160	161 - 200
	SA	SWSB_DEC	< 5	5 - 19	20 - 45	46 - 80	81 - 150	151 - 180
C	LT	LT	< 2	2 - 19	20 - 50	51 - 90	91 - 130	131 - 210
	PL	PL	< 2	2 - 11	12 - 40	41 - 80	81 - 140	141 - 220
	SB	SB_UP	< 7	7 - 19	20 - 80	81 - 120	121 - 180	181 - 250
		SB_LOW	< 5	5 - 19	20 - 55	56 - 85	86 - 170	171 - 210
	SW	SW	< 7	7 - 19	20 - 70	71 - 100	101 - 160	161 - 180

BAP strata were required to predict the full range of species important for biodiversity and included rare stand types such as birch. In comparison, timber supply determination requires solid information about the most common strata. As a result, there were more BAP strata than species strata. To permit effective communication between groups, species strata were aggregates of BAP strata. Species strata were used by the TSA IAG to predict timber volumes for allowable cut determination. Timber supply yield curves were constructed using data sampled from species strata, whereas BAP attributes were constructed using information based on BAP strata.

In the forecasting process, all biodiversity indicators were tracked at the BAP strata level, but targets were set at the level appropriate to control the indicator behaviour. For example, oldgrowthness was tracked and reported at the BAP strata level but controlled in the model at the managed/gross and broad cover group level (mixedwoods only) to produce the desired results. Timber supply volumes for the BAP strata black spruce upland and black spruce lowland were the same.

Table 37 summarizes the forested area stratification and the applicability of each stratum to the gross and managed landbases of the DFA. In short, all species strata apply to the gross landbases of W11 and W13; LT and SB are not applicable in the managed landbase of W11 and LT is not applicable to the managed landbase in W13. These species strata exceptions on the managed landbases are the result of the merchantability of the species that fall under these strata, as defined by the forestry operators and accepted by the Alberta government.

Table 37. Strata description and applicability to the gross and managed landbase of the DFA.

BCG	Species Strata	BAP Strata	Description	W11 Gross	W11 Managed	W13 Gross	W13 Managed
D	AW	AW	Aspen	Yes	Yes	Yes	Yes
		PB	Poplar	Yes	Yes	Yes	Yes
	BW	BW	Birch	Yes	Yes	Yes	Yes
DC	AP	AW_PL	Aspen leading pine mixedwood	Yes	Yes	Yes	Yes
	AS	AW_SWSB	Aspen leading spruce mixedwood	Yes	Yes	Yes	Yes
		PB_CON	Poplar leading mixedwood	Yes	Yes	Yes	Yes
CD	PA	PL_DEC	Pine leading mixedwood	Yes	Yes	Yes	Yes
	SA	SWSB_DEC	Spruce leading mixedwood	Yes	Yes	Yes	Yes
C	LT	LT	Larch	Yes	**No**	Yes	**No**
	PL	PL	Pine	Yes	Yes	Yes	Yes
	SB	SB_UP	Upland black spruce	Yes	**No**	Yes	Yes
		SB_LOW	Lowland black spruce	Yes	**No**	Yes	Yes
	SW	SW	White spruce	Yes	Yes	Yes	Yes

4.2 Oldgrowthness

The term 'oldgrowthness' is used to constrain the amount of old-growth characteristics on the landbase, within the TSA model. It is a biological measure developed by Dr. Doyon from IQAFF. This measure is not the integer approach to old growth that is typically taken when defining old growth. It is based upon the premise that old growth is a transition through time and stands may show portions of old growth characteristics depending upon their development stage and this portion will increase up to 100% through time. Oldgrowthness is based on a habitat suitability index (HSI) process of creating curves Dr. Doyon explains the concept as follows.

> *"Oldgrowthness is a continuous measure of old-growth. The assignment of oldgrowthness used the approach of fuzzy logic where a state is not considered fixed but as probability of being in that state. In the case of oldgrowthness, a stand starts to obtain a probability of being oldgrowthness at the mid-point of the mature seral stage period with a value of 0.5 and it increases it oldgrowthness value up to 0.75 when the stage switches from mature to oldgrowthness. It then keeps increasing at the same rate as it ages as an old-growth stand until it gets to 1. At this moment, the stand is fully an old-growth stand. If the stand is naturally initiated after a natural catastrophic disturbance, it maintains many biological legacies that come from the old-growth stage it was before disturbance and retains a non-zero value of oldgrowthness. However, the oldgrowthness rapidly declines as the biological legacies are lost as the stand ages. After clearcutting, if no efforts are made to retain any biological legacies, the oldgrowthness is zero after clearcut."*

In the development of the PFMS, the forecasting process used various oldgrowthness curves based on a stand's origin: 1) natural origin (refer to Figure 2); 2) natural origin with thinning

treatments; and 3) managed. Figure 2 shows an initial level of oldgrowthness in natural stands; this represents the oldgrowthness values associated with snags, down woody debris and other old growth characteristics. These oldgrowthness values are no longer present after a stand is harvested.

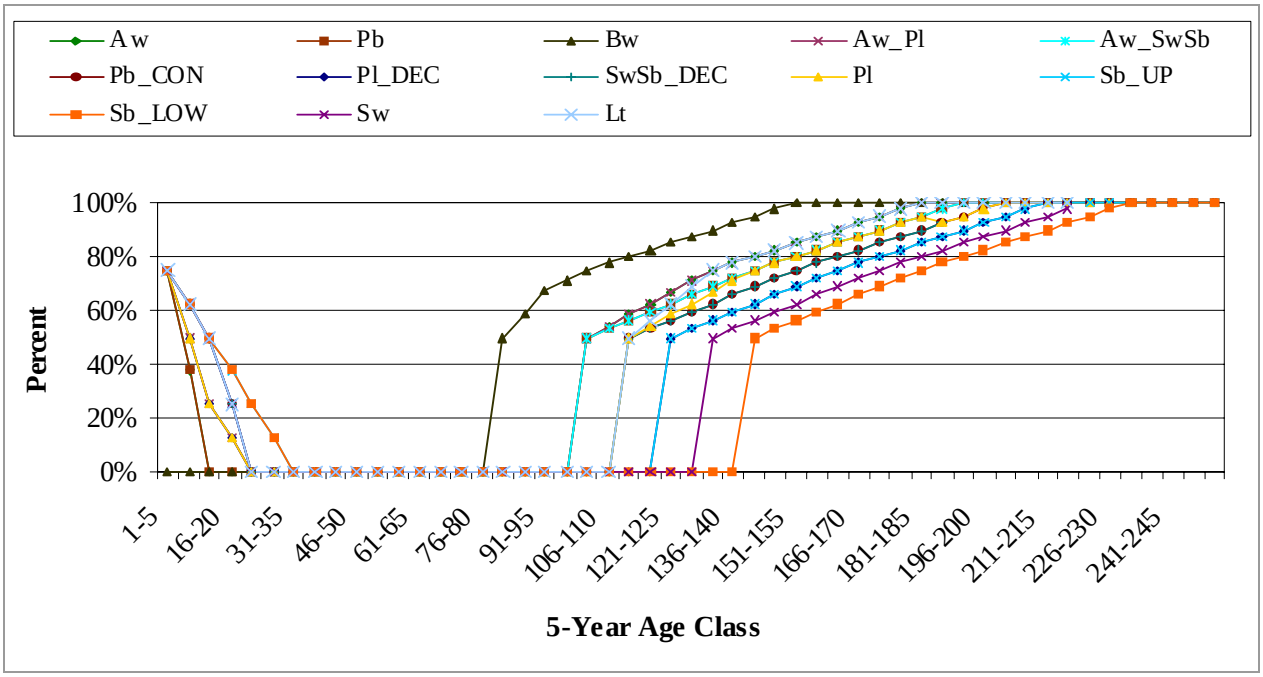

Figure 2. Natural stand origin oldgrowthness proportion over time.

4.3 Interior Oldgrowthness

The Alberta government defines interior forest as "a forested area greater than 100 ha in size located beyond edge effect buffer zone". The distance of the edge buffer zone varies depending upon the difference in ages between the stands.

In Millar Western's case, the spatial forecasting tool PatchWorks didn't allow for the simulation of the edge effect buffer zone, so a proxy was developed that would permit interior oldgrowthness to be a controlled indicator within PatchWorks. Based on the BAP IAG's assessment and recommendation, the minimum threshold area for individual interior oldgrowthness patches was set at 120 ha. Overall, this increase compensated for the edge effect buffer zone, and will serve as a proxy for the government's defined minimum interior forest area of 100 ha.

4.4 Cutover Update Process

4.4.1 Background

Managing and understanding spatial data has become a key aspect to sustainable forest management planning. Therefore, every 10 years when Millar Western is required to complete a Detailed Forest Management Plan, an accurate and up to date spatial representation of the Defined Forest Area is completed. This data is created in a spatial environment and typically includes an extensive number of data sets. Of particular importance are the blocks and roads that the forest operators in W13 and W11have harvested and constructed over the previous 10 years. Alberta forest companies use a wide range of methodologies to create this data. Typically GPSing or remote sensing are the most frequently used methods. Millar Western has remotely sensed the forest management activities on the FMA since the late 1990s. The cutover update process described below includes not only the block boundaries of blocks harvested in the DFA but also the roads constructed and the spatial capture of values described in approved DFMP (e.g. Structure retention, unmapped creek buffers etc).

Although every effort is made to ensure that all block boundaries are mapped accurately after block layout is completed, all final harvest boundaries may not be completely accurate. This can occur for several reasons: change during harvesting and poor layout mapping. Currently the most effective (cost and time) means of correcting boundary inadequacies and ensuring a better means of tracking final harvest areas is through the use of orthographically rectified aerial photography and subsequent digitizing of the final location of block boundaries, road locations, and non-timber values.

4.4.2 Approach

Each year the blocks and roads harvested and constructed by all forest operators in the DFA are determined and provided to the forestry consultant. This is usually available by April of each year. This list (shapefile) is typically created by the planning department and provided to the forestry consultant to determine a flight plan for the year.

The forestry consultant then provides Millar Western a map of the proposal to ensure all blocks and roads will be included in the flight plan. The capture of aerial photography at the required scale (1:30,000 or 1:40,000) is dependent on the green up of the forest and the weather. Potential exist for a varied green up of the forest and for unacceptable levels of cloud cover. Therefore, the timelines for completion are variable. Historically, projects have been completed mid to late summer.

Once the aerial photography is captured by the photography contractor, the diapositives are scanned to create a digital image of the photograph. A copy of the contact prints are provided to Millar Western.

The forestry consultant ortho rectifies the images and they are now available for use in the update process.

Block Updates: The block updates are completed by the forestry consultant by digitizing a final boundary following the opening on the ortho, using the original planned boundary and previous version of the ortho as a guideline. Decisions are made on the fly to accommodate for any boundary amendments. As such, some areas may be included/ deleted from the original planned harvest area.

Road Updates: The road centreline updates include all roads (LOC, inter-block and in-block) and are completed by the forestry consultant by digitizing a final road centerline of the road by following the clearing/ road surface on the ortho, using the original planned road centrelines as a guideline. Decisions are made on the fly to accommodate for any road amendments. As such, some areas may be included/ deleted from the original planned road.

Upon completion of the block and road updates, the consultant then passes the updated line work on for Millar Western Review.

Quality Control Process: Millar Western's review is critical to the success of the update process and ensures the accuracy of all line work from the block and road updates before input into the spatial database. A map of each block and road is created and is provided to a representative from the planning and operations departments to review for accuracy of final boundary and centreline locations. A meticulous review is required of each department representative as each person will evaluate the final boundary and centrelines from a specific viewpoint. Block boundaries will vary from planned because of operational decisions made at the time of harvest such as areas of blocks left for structure retention or unmappped watercourse buffers missed during layout. The planner will also be able to identify areas of blocks using older orthos that show parts of blocks that are natural openings that should not form part of the final block boundary or the removal of an industrial disposition that remains unconstructed.

All areas not included in blocks from the original block design will then need to be coded (on the map) to provide for clear tracking of the land base within operating areas.

Any errors with digitizing of the final block/road linework are to be highlighted and appropriate comments written on the map. All maps with comments and coding are to be returned to the planning member who is facilitating the update process. That member will then conduct a final review of necessary changes and either return them to the forestry consultant for revisions or complete them themselves (only simple edits) or forward the final correct GIS block and road linework to the GIS data entry staff. The blocks and roads will be updated in the MW GIS.

The final step in the update process is to include a map of the updated final block/road in the block and road file.

4.5 Structure Retention Strategy

Sustainable Resource Development defines residual structure as standing structure that is taller than 2 m, within a harvested area. Areas buffered for sensitive ecological or wildlife habitat may

be included for residuals. Required buffers for lakes and small and large permanent streams are not included. This includes non-merchantable trees and shrubs, live merchantable trees, snags and stubs.

Millar Western has set a target that maintains 1% of the total annual allowable cut as residual structure. The residual structure will be applied by FMU and prioritized by compartment. It is through Millar Western's landscape analysis of age class distribution, large areas of same seral stage, rarity and diversity of forest stand types, and the seasonality of certain compartments that the 1% target will be applied. Targets will be measured at a select compartment level and a coarse strata level: C, CD, DC, D.

Due to Alberta Vegetation Inventory limitations and site specific situations such as licks and den sites it will be considered acceptable to include up to 20% of the overall target as sites that are non-merchantable, shrubs or open areas.

It is not necessary to consider the residual structure target as an annual allowable cut drain but more importantly as a target to ensure the recruitment of species and strata fit effectively within a harvest plan. There will be instances where Millar Western planning and operations staffs have the opportunity to create larger landscape corridors by designing and retaining patches of merchantable timber that are recoverable at a later sequence.

The goal of this strategy is to retain trees in a series of clumps within a cutblock and to have those clumps represent the stands that occupied the site pre-harvest. Unfortunately some species and strata do not have the physiological characteristics that would allow these trees to stay upright and wind firm and thus satisfy our goal of maintaining long and medium-term standing residual structure. That being said the following strata will be considered priority over others as they would have the best chance of maintaining the characteristics of standing residual structure; AW, AP, AS, BW.

Upon approval of the DFMP Millar Western will engage the Alberta government's Fish and Wildlife Division to effectively allocate the residual retention in the select compartments. The select compartments for residual retention are as follows:

- W11 – 13, 15, 5, 10

- W13 – Meekwap, Kaybob, Pass Creek, Athabasca Hills, West Windfall, Robison, Paddle River

1. Millar Western Area Planners will use this information to formulate a block level plan that meets the intent of this target. Each block will be considered for residual structure retention and described within the required planning documentation. Candidate areas for structure retention will be identified through a combination of ground-truthing and air photo interpretation.

2. Patch sizes and distribution should be designed to ensure operational feasibility. Small patches (0.01 – 0.2 ha) will be used where block size or shape restrict the use of larger patches (>0.2 ha). No patch shall be smaller than 0.01 hectares (10m X 10m).

3. Research indicates that the area within 100 metres of the adjacent forest is the most effective placement of residual retention. Millar Western will retain residual structure within 100m of the block boundary to create a gradual ecotone between the cutblock and un-harvested forest.

4. Retain residual structure near ephemeral draws and intermittent streams whenever possible. Buffers on permanent creeks already required by regulations (ground rules) cannot be used to meet structure retention requirements; however, additions to buffer areas may be used to meet the goals.

5. The Company may create stubs anywhere within the harvested area. These stubs are useful to supplement snag densities, aid in wind-firmness of residual patches or for use as rub posts.

6. All patches left permanently for residual retention will be planted and be considered part of the cutblock.

7. All silviculture practices will maintain patches providing they do not significantly impact reforestation requirements.

8. Dead standing snags will be retained whenever possible.

On an annual basis Millar Western will calculate and report the amount of volume left on the DFA for residual retention. Residual retention volumes will be calculated using spatial analysis and the approved timber supply yield curves. All DFA cutblocks will be aerially photographed and the boundaries and in-block patches will be delineated and stored as GIS data. The residual retention patches will be overlaid with the timber supply species strata and a respective volume will be calculated as represented by the strata. An area of residual retention patches will also be produced for each block and compartment. Each patch will also be assigned an attribute to determine whether the volume is to be considered drain against the annual allowable cut. This data will be reported annually through Millar Western's sustainable forest management pan report.

4.6 Heritage Resource Review Process:

4.6.1 Background

In the late 1990's and early 2000's the Alberta forest industry was engaged by Community Development (the name of the department at that time, now called Tourism, Parks, Recreation and Culture), to promote the development of internal processes to comply with the Historical Resource Act. This Act had been largely ignored by most natural resource companies as there was no understanding of how to approach complying with the Act with large scale operations. Community Development required companies to approach this probabilistically based off an earlier version of Millar Western's model developed in their 2000 DFMP.

Millar Western's current process has been refined from the original process defined in the 2000 DFMP. The original process was not cost effective and very onerous in terms of tracking and compiling information and understandability of the process. The current process uses key elements of the original and has been streamlined using an automated GIS application developed by Don Thompson, GIS Coordinator.

4.6.2 Approach

Each year the Annual Operating Plan is developed and a series of blocks and roads (crossings) are selected as part of this document and typically completed in May/June of each year. Prior to this list being used for heritage resource review it is scrutinized for any blocks previously harvested or assessed in previous years (blocks are then removed from the list) and roads that have been previously reviewed or constructed in previous years (these roads are removed). This block and road list is refined one step further by excluding in-block roads. These roads are excluded as the original analysis done by Alberta Western Heritage concluded that the majority of roads do not create sufficient site disturbance to warrant separate review outside what is already assessed at a block level. The list (typically a GIS shapefile) is now considered complete and provide to Millar Western's GIS staff to run the probabilistic heritage resource GIS application. Blocks will be in the form of polygons and the roads will include the road centre-lines. After the heritage resource GIS application is run on the selected blocks and roads, the GIS file is sent to the contracted archeological firm hired for this specific review. Alberta Western Heritage (AWH) is currently the consulting firm completing this review for Millar Western.

A key piece of information is created after the heritage resource GIS application is run. The Heritage Potential (HP) values are created for harvesting and silviculture disturbances and determine the probabilistic significance of the site relative to the amount of disturbance expected on this site. Within the GIS application, both the harvesting and silviculture activity is defaulted to the most severe activity to assess only these sites that of greatest concern. Once AWH has reviewed the file, contact is made with MW staff, both planning and silviculture, to confirm treatment types. This discussion must take place as it will ensure the correct level of disturbance is being modeled and will significantly reduce expenses associated with field sampling by AWH. For example the model assumes severe site preparation on a select block that then creates a high heritage potential rating. AWH will then discusses this block (usually several) with the silviculture forester and if the site preparation treatment is less severe e.g. brush raking, then the

block is reassessed and assigned a lower HP. Currently the model uses a CRICS value of 2 for winter harvest, 3 for summer harvest, and 4 for all silviculture site disturbances and the model uses a value of 4 for all primary and secondary roads.

AWH will complete their professional review of all blocks and roads and then determine which blocks and roads require field assessment. Several factors are used to determine whether the blocks and roads should be either pre or post impact assessed. Once the field assessments are determined the list of blocks and roads is provided to the supervising planning and silviculture staff and a research permit is applied for through The Department of Tourism, Parks, Recreation and Culture to carry out the field work required.

There is occasion when blocks proposed for silviculture treatment (site preparation) are not covered in the AOP. The Silviculture department will determine and submit those blocks to AWH not reviewed through the AOP process. AWH will consult with the respective silviculture staff member to ensure the correct CRICS value is being used.

Once AWH has completed the office review of the plan, AWH will determine if a helicopter flight warrants further assessment of blocks and roads before the field surveys commence. This flight may or may not be required each year.

Field surveys will be carried out as determined.

AWH will notify planning staff immediately if there are any sites that require protection or mitigation as a result of field surveys. AWH will typically ribbon the area off and subsequent to this either the area planner or area supervisor will follow up to re-ribbon the site with MW block boundary ribbon. GPS points will be provided to the GIS Dept by AWH and an email will be sent by the Planning Manager to all Woodlands staff indicating the site and the protection/mitigation measures.

AWH will complete a report which summarizes the findings and recommendations (by block and road) of the permit application and submitted to The Department of Tourism, Parks, Recreation and Culture for their approval. MW will be provided a copy of the report prior to submission to ACD. All survey points will be GPS'd and provided to MW for entering into MW GIS.

5. References

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