Millar Western Forest Products Ltd.

Chapter 5 – Forecasting and the Preferred Forest Management Scenario

2007-2016 Detailed Forest Management Plan

November 15, 2007

SUMMARY

A requirement of the Detailed Forest Management Plan is that forecasting be undertaken to predict future forest impacts from management activities and that this information be used to develop management strategies. The end result of the forecasting process is a Preferred Forest Management Scenario, and its associated spatially explicit harvest sequence, which best meet the objectives from the forest. These objectives vary from timber production and water run off levels, to biological diversity retention. The first 20 years of this harvest sequence is referred to as the Spatial Harvest Sequence, which must be followed for at least the next 10 years based on the Alberta Forest Management Planning Standard (Version 4.1) (ASRD, 2006).

Due to the wide range of objectives that were desired from the forest it was recognized that individuals or small groups could not complete the entire process. Therefore Millar Western brought together experts from numerous different fields to create inputs and develop indicators and targets for all of the different values on the landbase. These experts created impact assessment groups which were tasked with defining inputs, indicators, and targets for the values and objectives associated with their respective areas of expertise.

Some of the groups were able to create indicators that could be loaded directly into the forecasting model to ensure that these indicators were being sustained at targeted levels. One such indicator was the amount of old growth area on the landbase. Other groups were able to load proxies into the model that represented the indicator of interest. Examples of indicators that were used as proxies include downed wood debris, and snag densities, which approximated the indicator if interest, habitat.

All of the groups were tasked with setting targets for the different indicators, but in many cases these targets conflicted with others on the forest. Before decisions were made regarding final targets to be implemented in the forecasting model that would be used to create the Preferred Forest Management Scenario, it was necessary to understand the trade offs that were associated

with the different targets. These trade-off analyses allowed the stakeholders in this process the ability to make informed decisions about the acceptable levels of indicators.

Through an extensive process of input, indicator development, refinement and trade off analyses, a final set of objectives were established and used to create a Preferred Forest Management Scenario for each FMU:

- FMU W11:
    - Maintain the approved 95,000 m^3/yr conifer surge cut from 2004 Preliminary Forest Management Plan that was developed to mitigate the effect of the conifer harvest reduction on the quota holders;
    - Maintain the Preliminary Forest Management Plan compartment sequence, and
- FMU W13:
    - Develop a conifer surge cut to reduce the risk and susceptibility of W13 to mountain pine beetle infestation and alter the pine age class distribution to be in line with the Alberta government's healthy pine forest strategy and the requirements of the mountain pine beetle Interpretive Bulletin;
    - Maintain a 50-50 spruce-pine harvest volume ratio;
    - Meet Weyerhaeuser's DTA commitments from the Whitecourt Mountain compartments. This required a small deciduous surge cut to address incidental deciduous volume generated from the conifer surge cut; and
    - Align the compartment sequence with the Alberta government's mountain pine beetle compartment risk rating.

In the opinion of the management team, the Preferred Forest Management Scenarios best met the social, biological, and economic objectives desired from the forest. The proposed harvest levels at a 15+/10 cm utilization by FMU and operator are provided in Table 1. Not included in these volumes, is a 1% volume reduction for structure retention that will be applied during layout and harvesting operations. The Spatial Harvest Sequence for both units can be seen in Map 1 and Map 2 for W11 and W13 respectively.

Table 1. Proposed harvest allocation for 2007-2016 from the Preferred Forest Management Scenarios.

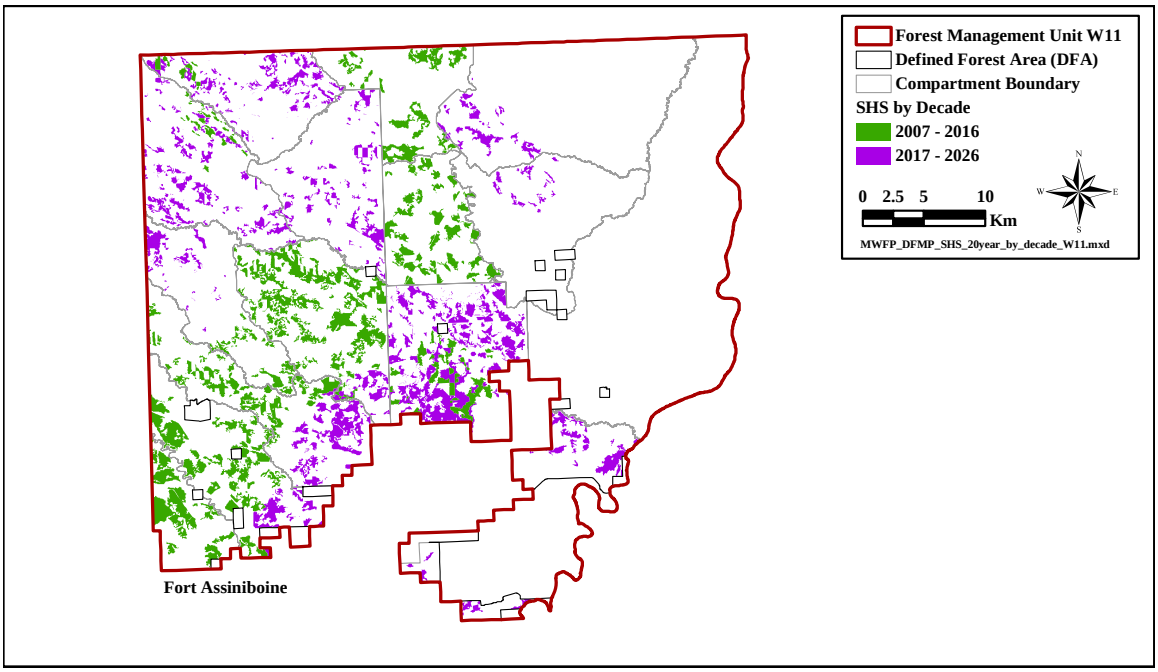
Company Name	Disposition Number / FMA Ref.	FMA/ FMU/ Grazing	Deciduous AAC (%)	Deciduous AAC (m3/yr)	Incidental Deciduous (%)	Incidental Deciduous (m3/yr)	Coniferous AAC (%)	Coniferous AAC (m3/yr)
W13								
MTU	[8(2)(e)(i)]	FMA						30,000
MTU*	[8(2)(e)(ii)]	FMA			100	861		
Weyerhaeuser	DTAW130001	FMU		45,000				
MWFP (QUOTA)	CTQW130002	FMU					4.42	19,264
MWFP (FMA)	FMA970034	FMA		157,099				376,925
MWFP	CTQW130001	Grazing					100.00	9,655
MWFP (Requested)**		Grazing	100.00	6,452				
Sub Total				208,551		861		
Total				209,412				435,844
W11								
MWFP	FMA970034	FMA		103,520				
OK Lumber	CTQ110005	FMU					21.05	19,975
Fort Assiniboine Lumber	CTQ110004	FMU					6.26	5,940
Spruceland Millworks Inc.	CTQ110006	FMU					72.70	68,987
MWFP (Requested)**		Grazing	100.00	2,529				
Total				106,049				94,903
FMA								
Area Residents	[8(2)(d)]	IN			1000***			

* within Whitecourt and Blue Ridge subunits

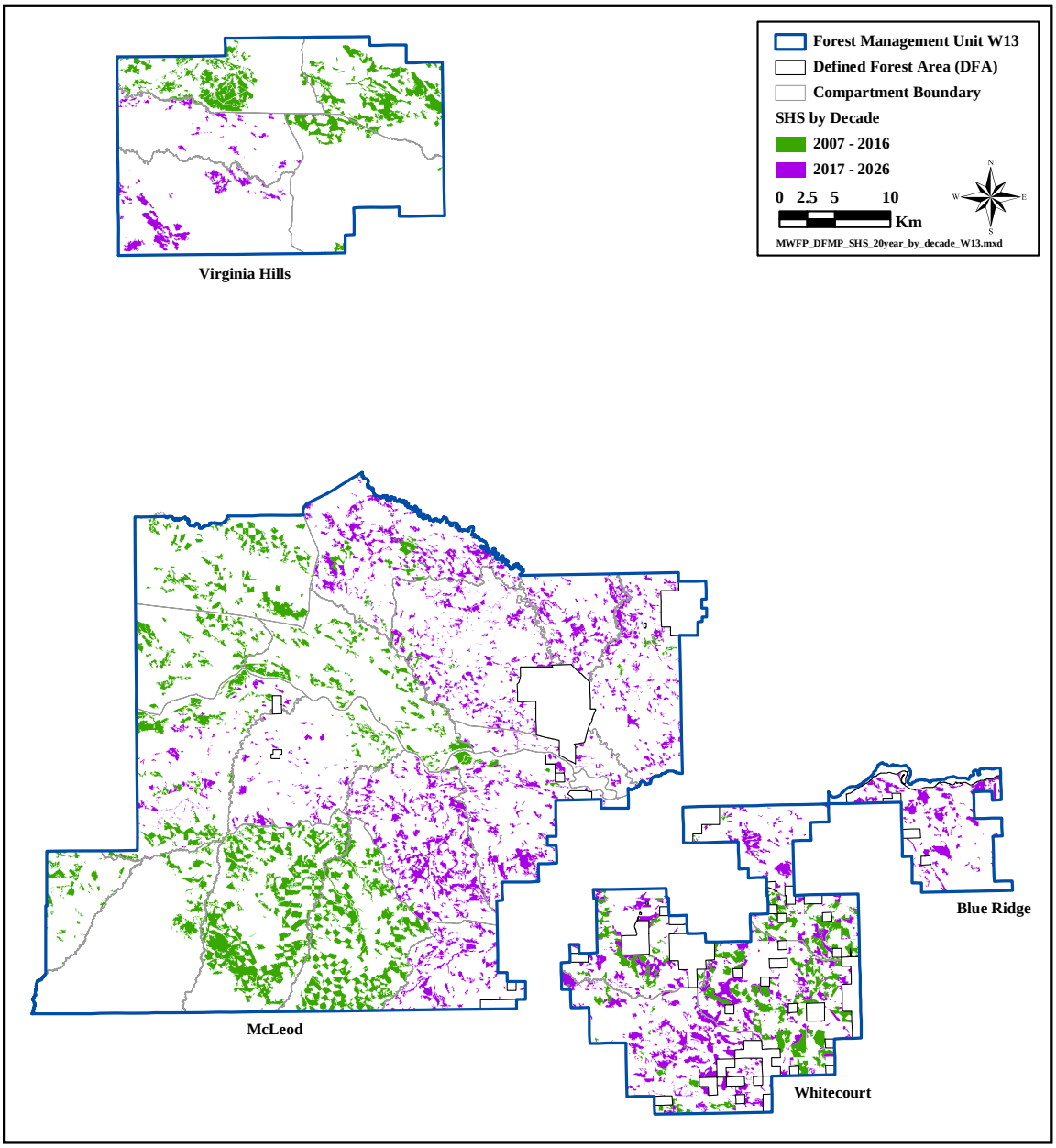
** July 18, 2006 letter to D.A. Sklar, re: DTA's for unallocated deciduous volume

*** conifer/deciduous(birch) Not accounted in calculations

Represent basis for calculations



Map 1. W11 Preferred Forest Management Scenario Spatial Harvest Sequence.



Map 2. W13 Preferred Forest Management Scenario Spatial Harvest Sequence.

The Preferred Forest Management Scenarios tracked numerous indicators and many of these indicators achieved the desired targets. The indicators varied by the Forest Management Unit.

In W13 mountain pine beetle was the key management issue. During the planning process the extent of mountain pine beetle spread into Alberta escalated dramatically. A Preferred Forest Management Scenario for W13 had almost been completed when the full extent of the threat posed by mountain pine beetle was realized both from a provincial and local perspective. Stands within the FMA became infested with mountain pine beetle in 2006, many years sooner than predicted by experts and available spread models. To address this, planning evolved, with an increasing emphasis on the reduction in risk of and susceptibility to mountain pine beetle

infestation in W13. Though mountain pine beetle became a key indicator during the planning horizon, it was only one of the indicators of interest in the planning process. The growing stock of merchantable timber, the amount of old forest area, and the size of patches, both old and young and water runoff are just a few examples of the indicators incorporated into the W13 Preferred Forest Management Scenario.

In W11 Millar Western does not have rights to the coniferous timber in the unit, and the operators in the unit did not wish to address mountain pine beetle in the current plan. Most other objectives that were incorporated in the W13 scenario were also incorporated in W11. An example of a W11 specific indicator is early winter access wood for harvesting, which is a key operational issue that was included in the development of the W11 Preferred Forest Management Scenario.

Overall the Preferred Forest Management Scenarios developed as a part of the 2007-2016 Detailed Forest Management Plan represent the result of a progressive and innovative planning process. The plan succeeded in:

- integrating a group of experts from wide ranging disciplines into an effective multi-disciplinary planning team to address critical management issues;
- expanding the number and scope of values, represented as indictors directly considered in the trade-off process used to develop the Preferred Forest Management Scenario;
- using more indicators, representing values as drivers in the development of the Preferred Forest Management Scenario;
- achieving a significant reduction in mountain pine beetle risk to the forest while balancing the conflicting values of biodiversity maintenance and increases in water runoff; and
- involving a wide range of harvesting operators in the development of an effective Spatial Harvest Sequence.

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