



MILLAR WESTERN FOREST PRODUCTS LTD.

2 0 0 6 - 2 0 1 6

DFMP *Newsletter*

NUMBER 8, March 2005

In This Issue

This issue includes a discussion on soil productivity and how it is maintained during forest management activities (page 2). Updates are also provided on the near-finished yield curves (page 4) and landbase (page 5), which will be submitted to the government in May. In addition, for those of you on the Detailed Forest Manage-

ment Plan (DFMP) team who are authoring a component of the plan, there is a Word template for you to use - please read about this on page 7.

If you have any comments, questions or would like to contribute to the newsletter, please contact Millar Western. Ideas for articles you would like to see are always welcome! Contact information is provided on the last page.



Trumpeter Swans on Baseline Lake in Millar Western's Forest Management Agreement area. To protect both swan and heron habitat, harvesting is not allowed within 200 meters of lakes with known populations of these birds.

CONTENTS

Section I: Public

Maintaining Soil Productivity 2

Section II: Millar Western

Yield Curve Update 4

Landbase Update 5

Timelines for
Modelling Timber Supply 5

Section III: Plan Development Team

Templates for DFMP
Documents 6

First Round of
Peer Review Begins 7

New Glossary of
Terms and Acronyms 7

Currently on the FTP Site 8

Contact Information 8



SECTION I: PUBLIC

Maintaining Soil Productivity

Soil productivity was recently a topic of discussion among the Public Participation Group at their meetings in Whitecourt. Soil is a crucial component of forest ecosystems. It is a medium for plant and tree growth, a medium for water, nutrient and heat storage and transport, and home to a host of organisms. Soil productivity is a measurement of how well a particular area of soil fulfills its natural roles.

The Public Participation Group is comprised of 10 public members who represent a cross section of interests in the Fort Assiniboine, Swan Hills and Whitecourt areas. Millar Western representatives meet regularly with the group to review the company's forest management strategies for the 2006-2016 DFMP. Included in these strategies is the requirement to maintain soil productivity during forest management. This is one of the over 30 different forest management requirements, or "performance standards", that are set by the provincial government.

As background, the provincial performance standards range from things like the maintenance of biodiversity across the landscape, to maintaining sustainable timber supplies, to conducting



Properly constructed watercourse crossings prevent soil erosion by maintaining the integrity of the channel, banks and vegetation.

meaningful public involvement. Each standard includes four key components (the provincial performance standards for the maintenance of soil productivity are shown in brackets):

- A Value that must be managed during forest management practices (Maintain soil productivity);
- An Objective for that Value (Minimize the impact of roads and bared areas in forest operations);
- An Indicator to measure the attainment of that Objective (Comply with Provincial Operating Ground Rules), and;
- A Target (Temporary roads, landing areas, displaced soil and ruts shall not exceed 5% of the cutblock area).

In order to protect soils and to comply with provincial regulations, Millar Western has their

own company-specific rules that their staff and contractors must follow during harvesting and silviculture (tree growth) operations. These rules are a component of the company's "Operating Ground Rules".



Tracks minimize the impact of machinery on soils by distributing the weight across a greater surface area.

Operating Ground Rules are the practices, or methods, used in planning and conducting timber harvesting and silviculture operations. The rules are adapted to regional issues and they also

incorporate provincial and national standards for forest management. Methods for soil protection are just one of the many different Ground Rules Millar Western follows.

The Ground Rules for soil protection serve to:

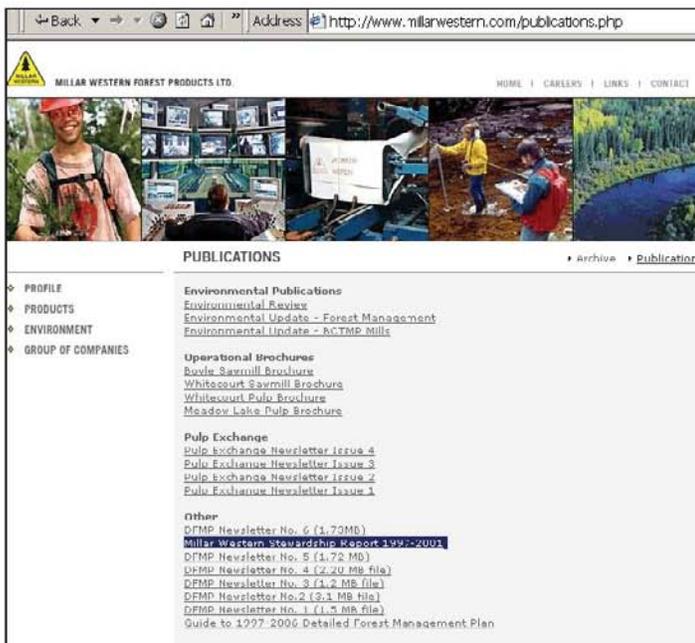
- Ensure the conservation of forest soil;
- Minimize impacts of harvest and road construction on soils;
- Minimize the potential for soil erosion, and;
- Ensure the capability of the site to support healthy forest tree growth is maintained.

Millar Western has eight Ground Rules they use to accomplish the above goals for soil protection:

1. All bared-soil areas that will not be reused in the next five years should be reclaimed/ reforested as soon as possible.
2. Operations shall be conducted in a manner that will minimize the adverse impact on soil productivity.
3. Temporary roads, bared landing areas, displaced soil and ruts shall not exceed 5% of the cutblock area. In small blocks, the 5% limit may be increased due to limited space with prior approval.
4. Of the total cutblock area, not more than 2% shall be disturbed by ruts. If rutting exceeds 2%, a remedial plan that outlines methods and procedures to reclaim the affected areas shall be submitted for approval.
5. Site preparation that creates linear disturbance should be oriented to minimize channeling of water downslope.
6. On sensitive soil sites, detailed block plans shall be required unless covered under a standard operating procedure.
7. Ephemeral and intermittent watercourses may be crossed, provided these crossings do not harmfully alter the integrity of the channel, banks, bed or vegetation.
8. Logs will not be decked in watercourses, water source areas or other machine-free areas.

Millar Western's current set of Ground Rules were developed in 2002. They incorporate findings from current research and case studies on soil properties. They also incorporate the detailed guidelines published in the provincial Forest Soils Conservation Report, which was developed by the Alberta Forest Products Association and the Land and Forest Service.

Like all forest companies operating under Forest Management Agreements, Millar Western must report to the provincial government on their degree of success in meeting their forest management targets. This is done in Annual Performance Reports and five-year Stewardship Reports. Millar Western's most recent Stewardship Report was submitted to the government in November of 2003 and was subsequently approved. It reported that all blocks that were visually assessed for rutting impact during



Check out Millar Western's website at www.millarwestern.com to find their most recent Stewardship Report, as well as other publications and information.

the reporting period were categorized as satisfactory. The Stewardship Report is available for download at www.millarwestern.com.

Millar Western's Ground Rules are currently being reviewed and revised to address changes in provincial regulations and increased understanding of forest processes. The revised Ground Rules will be submitted as a component of the DFMP in May, 2006.

Millar Western is doing several things to expand their understanding of forest soils. For instance, they are currently conducting a detailed survey of the different types of forest soils in their Forest Management Agreement area. The soils inventory is conducted by soils scientist Dr. Ivan Whitson. It incorporates many soil parameters including: chemical and physical properties, nitrogen and phosphorus pool characteristics of upper soil horizons, carbon pools, hydraulic properties, subsurface water flow behaviour and moisture content. In a related project, Dr. Whitson is also working on the Forest Watershed and Riparian



Dr. Ivan Whitson is conducting a detailed soils inventory of Millar Western's FMA area.

Disturbance, or FORWARD, project (see March 2004 issue). A major component of FORWARD involves looking at how forest fire and harvesting disturbances affect forest soils. Findings will be used to predict disturbance-induced changes. These predictions will, in turn, be used by forest planners to manage changes and mitigate impacts.



Roshan Gervais takes soil temperature measurements for the FORWARD project.

For more information on how Millar Western maintains soil productivity, please contact Ray Hiltz, Planning Supervisor, at (780) 778-2221 or rhiltz@millarwestern.com.

SECTION II: MILLAR WESTERN

Yield Curve Update

Yield curves are graphical representations of tree volume over time. They are fit using statistical models and data gathered within Millar Western's forest management area. Preliminary yield curves have been developed for the eight natural stand strata in each of Forest Management Units (FMU's) W11 and W13. The next steps are to develop yield curves for the Good, Medium and Fair site productivity classes in FMU W13, and fully-stocked curves for managed stands. Yield curves for the Virginia Hills Burn stands, Windfall Burn stands and Athabasca Flats horse logging area are also being developed. Yield curve development is on target for submission to the government in May, 2005.



The Athabasca Flats is an area along the Athabasca River that is logged using horses. The area is managed for wildlife habitat and aesthetic values. Horse logging began here in 1994 and is still ongoing.

Landbase Update

The Landbase for the DFMP describes the forest within Millar Western's Forest Management Agreement area. Round 4 of the Landbase has been completed. It includes roads, blocks and landuse, and additional datasets such as lakes, recreational and historic trails, traplines and operational buffers.

There are a few datasets still to be incorporated and the next and final version of the landbase will be completed in May. The landbase netdown process is reviewed at each meeting of the Timber Supply Analysis Impact Assessment Group and is on target for submission to the government in May, 2005.

Timelines for Modelling Timber Supply

The Round 4 Landbase for the DFMP describes the state of the forest in Millar Western's Forest Management Agreement area in the year 2001. What does this mean to the DFMP, which is being submitted in 2006?

The following explanation and flowchart is intended to help clarify the timelines for the landbase and Timber Supply Analysis (TSA) for this DFMP. There are three key dates to consider here:

1. 2006 - The Start Date of the TSA planning horizon.
2. 2004 - The Effective Date of the landbase, which is the date up to which the Alberta

Forest Inventory has been updated for use in the DFMP (including cutblock and landuse updates).

3. 2001 - The Initial Landbase for the DFMP describes the forest age and harvest activities in year 2001.

The TSA Start Date must correspond with the date of the final DFMP submission; May 2006. The TSA planning horizon is from 2006 to 2206, and the TSA model uses optimization and constraint techniques to build a 200-year harvest schedule. A harvest schedule is a long-term plan for where and when harvesting will occur. Once approved by the government, the harvest schedule will be implemented in the forest. The 200-year time period is called the TSA planning horizon.

The Effective Date is the date up to which the landbase that is used in the TSA model is updated for harvesting and landuse activities (e.g. oil and gas developments). That is, the physical description of the forest and all its attributes is current to the Effective Date. As per government regulations, and so that the landbase used in the TSA is an accurate reflection of what is actually on the ground, this date must be no more than two years prior to the DFMP submission. Millar Western's Effective Date is May 2004.

The Initial Landbase for the DFMP describes a "hypothetical forest" in year 2001. The tree ages and harvest activities are current to year 2001 but other land use such as oil and gas is still current to 2004. Here's why:



Members of the TSA Impact Assessment Group discuss growth and yield predictions for the new DFMP. From left to right: Brian Wallach, Willi Fast, Katrina Froese, Tim McCready, and Don Thompson. Brooke Martens and Jonathan Russell are facing the screen.

The timber supply analysis (TSA) for the DFMP will be completed in fall 2005 to meet the DFMP publication timelines. As harvest activities that occur in winter 2005 need to be incorporated in a timber supply analysis with a start date of 2006, and the TSA model works on five-year increments, the model is set to begin retroactively at year 2001. This pushes the planning horizon from 200 to 205 years. To start the TSA model in 2001 requires a physical description of the forest in 2001; this is called the Initial Landbase.

There are three things to note regarding the Initial Landbase.

First, since most of the harvesting between 2001 and 2006 has already occurred, the TSA model does not use optimization and constraint techniques to build a harvest schedule for those five years. Instead, existing blocks harvested between 2001 and 2004 are “forced” in the TSA

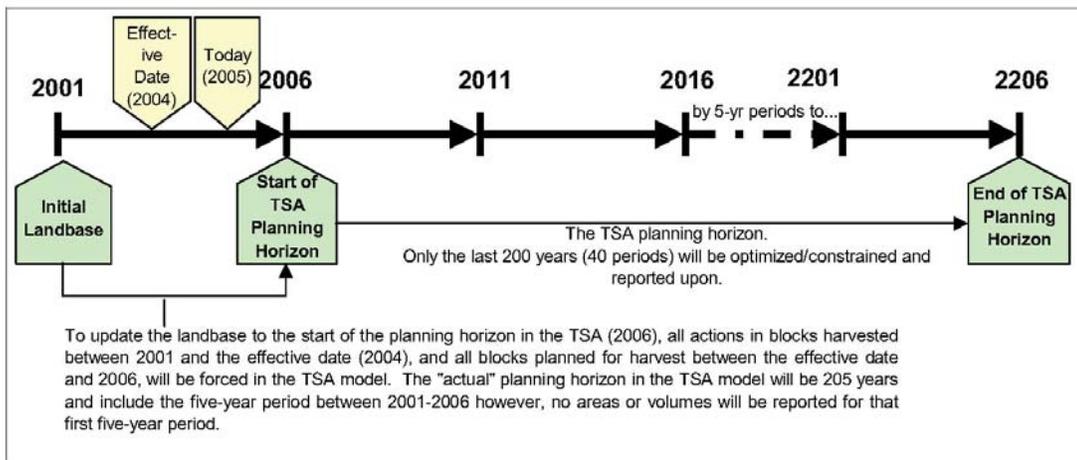
model. In this way, the Initial Landbase is updated to 2004 - the year of the Effective Date.

Second, due to technical modeling constraints, oil and gas activities current to the year 2004 are included in the 2001 Initial Landbase. In this sense, the Initial Landbase is somewhat hypothetical - it has 2004 oil and gas descriptions but 2001 tree descriptions. By the time the TSA model is run to year 2004 the landbase is an accurate reflection of forest conditions in that year. The intent of the Effective Date is maintained.

Third, harvesting during the two years between 2004 and 2006 (the official Start Date of the TSA) are also forced in the timber supply model as “planned” blocks. This brings us to the Start Date of 2006, after which the model uses optimization and constraint techniques to build a 200-year harvest sequence.

To date, the information for existing cutblocks prior to the Effective Date (2004) is still being processed, and the planned blocks between the Effective Date and the Start Date for the TSA planning horizon are yet to be determined. The planned blocks will be developed over the summer and will not be finalized until the final preferred forest management strategy is developed in the fall of 2005. This approach was taken to allow a net landbase to be developed for review by the government in May 2005, while allowing for flexibility to change the planned blocks without affecting the Initial Landbase.

For more information please contact Brooke Martens at brooke_martens@forcorp.com or (780) 452-5878.



Flowchart showing the timber supply analysis (TSA) planning horizon, the Initial Landbase at year 2001, the 2004 Effective Date, and the 2006 TSA start date.



John Stadt, Forest Ecology Specialist with the provincial government, explains to the TSA Impact Assessment Group possible methods to identify and maintain large areas of old forest during forest management planning. Left to right, from top: Brian Wallach, John Stadt, Ray Hilts, Ted Gooding, and Daryl Price.

SECTION III: PLAN DEVELOPMENT TEAM

Templates for DFMP Documents

Multiple authors from the various Impact Assessment and Landscape Projection Groups will be contributing documentation to include in the DFMP. In order to facilitate the assembly of the document, templates for Microsoft Word documents and Microsoft Excel tables and figures have been developed.

It is important that these templates are used for all reports submitted as a component of the DFMP. Here's why:

The DFMP document is being written in Adobe FrameMaker (a desktop publishing software). To successfully import your Microsoft Word document into the FrameMaker document, FrameMaker must be able to recognize the paragraph and character style names in your Word document. For that reason, please use only the styles provided in this document template.

The template also includes instructions on:

- How to format Word documents;
- How to format Excel tables and figures, and;
- What files to include in your DFMP submission.

The template is posted on the FTP site for the DFMP. If you have any questions about it, or if you would like help with Word and how the styles work, please contact Gunnilla Nilsson at gunnilla_nilsson@forcorp.com or (780) 452-5878.

First Round of Peer Reviews Begins

A peer review is being conducted on all DFMP components as well as the entire DFMP document.

A review of the plan components (including Public Participation, Impact Assessment Groups and Landscape Projection Groups) will be completed in two stages. The first review is done on the proposal and work plan for each component. The second review is done after each planning group's first set of results is analyzed but before work is completed. This review approach was designed to influence current plan development.

The final part of the peer review process will be a review of the entire, completed DFMP. This review will take place after plan submission and is designed to influence the next DFMP development (2016-2026).

Peer reviewers began the first stage of their work in January. Their feedback will be provided to each DFMP planning group so that it may be incorporated into further processes.

New Glossary of Terms and Acronyms

For all plan developers, if you are beginning to feel overwhelmed by the lingo and acronyms used in



Tree planting in past summers. Millar Western's spring tree plant begins May 15th. The summer plant usually begins June 20th for two-year-old stock and July 5th for one-year-old stock, both dependant on the readiness of tree nursery stock.

the development of the DFMP, Millar Western has developed a glossary. The glossary defines close to 500 terms and over 200 acronyms that pertain to this DFMP. The intent is not only to clarify what somebody means when they say, "The SRD OGRs clearly state that the DFA in the PHP be consistent with the approved GDP." (You'll have to look it up.) The intent is also to ensure consistent use of terminology in the development of the plan. As an example, to reference forest stands initiated by natural disturbance (e.g. fire) versus human disturbance (e.g. harvest- ing):

- Natural Stands refer to "(for- est) stands developed under natural (non-anthropogenic) disturbance regimes. Stand initiation was due to natural disturbances such as fire, pest or pathogen outbreak, etc."
- Managed Stands refer to stands initiated "by anthropo- genic (human-caused) distur- bance such as harvesting."

The glossary is available for download from the FTP site.

Currently on the FTP Site

If you are on the DFMP planning team and require the login and password for the FTP site, please contact Gunnilla Nilsson (see contact information below). Currently on the site:

- The new Glossary
- DFMP Word and Excel Templates

Please contact Millar Western if you wish to be removed from the DFMP Newsletter mailing list.

- Communication Plan, December 20, 2004 draft sub- mission
- Terms of Reference, January 2005 final submission
- DFMP process flowchart ("PERT chart")
- The FireSmart workplan
- Wildfire Threat Assessment User Guide
- IAG and LPG workplans for the peer review process
- Landbase Round 4
- DFMP Newsletters
- All DFMP planning team meeting summaries
- Information on how to down- load the Natural Subregions revised boundaries
- August 2004 Preliminary Forest Management Plan (for Forest Management Unit W11)
- Plan Development Team con- tact information



2006-2016 DFMP Glossary	
Glossary (February 15, 2009 draft version)	
AAC-chargable action	Tender volume either produced or consumed that is charged against AAC gain including the losses, windrow and other dispositions. Green tree retention would not be charged against AAC if the loss is taken up front in the T30, only the additional volume would be.
Aborigine	"Aboriginal peoples of Canada" (Article 31) includes Indian, Inuit, and Métis peoples of Canada (Constitution Act, 1982, Subsection 35(2)) (CSA)
Aborigine rights	Rights that some Aborigine peoples of Canada hold as a result of their ancestors' long-standing use and occupancy of the land" (The State of Canada's Forests 2007(2002), (CSA)
Aborigine title	"A legal term that recognizes the interest of Aborigines in the land. It is based on their long-standing use and occupancy of the land as descendants of the original inhabitants of Canada" (The State of Canada's Forests 2007(2002), (CSA)
Access control unit	Groups of forest stands classified solely for the purpose of spatial harvest sequencing in the forest supply modeling process.
Accurate work	"It is free of errors or omissions and is submitted on time. It is recognized that mistakes will occur occasionally. Prompt notification and correction of mistakes when discovered is the appropriate action. 2) Deviates from a standard only within acceptable limits, as specified by Alberta. Technical standards and tolerance levels in working acts, regulations, policies, directives, guidelines, ground rules and approved plans will be amended from time to time by Alberta. 3) Contains sufficient information to be readily understood. Complete documentation and explanation of work is demonstrated. (SAC)
Action	Forest management activities modeled in the timber supply tools. (SAC/FF)
Adaptive management	The process of planning activities, implementing activities, monitoring results and comparing against planned results, and taking corrective action when unexpected results occur. (SAC)
Aspen	Management restrictions to regulate the creation of harvest openings. An opening created by harvest must "close" through a new forest or other vegetation growing to a certain height before another harvest unit can be placed next to it. (Dunster, Julian and Katherine, 1998. Dictionary of Forest Management Terms, www.millarwestern.com)

Contact Information

Millar Western Forest Products Ltd.
Wood Products Division
5004-52 Street
Whitecourt, Alberta T7S 1N2
Canada
www.millarwestern.com

Jonathan Russell
jrussell@millarwestern.com
(780) 486-8227

Gunnilla Nilsson
gunnilla_nilsson@forcorp.com
(780) 452-5878

Ted Gooding
ted_gooding@forcorp.com
(780) 452-5878



MILLAR WESTERN FOREST PRODUCTS LTD.

DFMP NEWSLETTER

2007 - 2016

Detailed Forest Management Plan

Number 9, February 2006

CONTENTS

INTRODUCTION	1
NEW TIMELINES	1
STAKEHOLDERS	1
Public Participation Group	1
Public Participation Group Field Trip.....	2
Forestry and Economic Development Agreement Update.....	3
FEATURE ARTICLES.....	4
Modelling Oil & Gas Drilling Effort in Alberta.....	4
Developing the Preferred Forest Management Strategy.....	6
EXTRAS.....	7
FORWARD Ph.D. Student Receives Award.....	7
New FORWARD Website	8
UPCOMING EVENTS.....	8
Open Houses	8
FORWARD Conference.....	8
Next Newsletter	8



INTRODUCTION

This, the ninth issue of Millar Western Forest Products Ltd.'s 2007-2016 Detailed Forest Management Plan (DFMP) newsletter, includes revised DFMP timelines, updates on stakeholder group involvement, feature articles from technical groups, new information on the FORWARD group and details on the upcoming DFMP open houses.

NEW TIMELINES

In January 2004, Millar Western submitted its DFMP Terms of Reference to Sustainable Resource Development (SRD), which contained, among other things, the scheduled submission dates for the DFMP. The dates, originally set at January 2006 for the draft and May 2006 for the final plan, have been moved to allow Millar Western more time to fully incorporate research findings into the Preferred Forest Management Strategy (PFMS). The new approved deadlines are **November 2006** for the draft and **May 2007** for the final version.

STAKEHOLDERS

In this section, we provide you with updates on stakeholder participation in Millar Western's DFMP planning process.

Public Participation Group (PPG)

*Jerry Bauer
Jerry Bauer Consulting Ltd.
PPG Facilitator*

Believing that the best forest management plans result from broad consultation, Millar Western has sought to extensively involve the public in the development of its 2007 – 2016 DFMP. This desire led to the development of a comprehensive Public Participation Strategy, based on guidelines that were published by the Canadian Standards Association (*CSA Z809-02, Sustainable Forest Management: Requirements and Guidelines*) and adopted by Sustainable Resource Development (SRD) in the *Alberta Forest Management Planning Standard*.

A main element of the strategy was the formation of the Public Participation Group (PPG), which is composed of members from throughout the Defined Forest Area (DFA), each representing different interests and geographic locations. Having met almost a dozen times since its inaugural meeting on September 20, 2004, the group has proven itself to be more than a token. Members have taken their role very seriously and become actively engaged in raising issues for the larger DFMP planning group to consider. For its part, Millar Western has tried to provide the group with a better understanding of the DFMP process, sharing with it information on its forest management agreement (FMA) area, government requirements and some



of the challenges it faces in meeting them. The company has provided specific presentations on various management strategies, timber supply analysis, modelling and values, objectives, indicators and targets (VOITs).

With respect to VOITs, the group has used its knowledge and understanding to provide useful input and recommendations that are now being considered by the plan development team. The PPG will also have an opportunity to review and comment on the final version of the VOITs in the first half of 2006.

In addition to its work on the VOITs, the PPG prepared an issues list in the spring of 2005 that covers a range of concerns, including overlapping tenure, use of herbicides and spiritual values. This list, which was presented both to Millar Western and SRD for response, will be used to guide the final development of the VOITs and preferred forest management strategy (see article on Page 6).

As the DFMP development process enters the home stretch, Millar Western reports that the PPG has exceeded its expectations in terms of providing plan developers with concrete and constructive input and feedback from a public perspective. This mechanism is, without question, helping to shape a plan that is more aware of and sensitive to public concerns than it would have otherwise been. That the group has been so effective is a testament to its members, who continue to serve with dedication and enthusiasm.

PPG Members

- Colin Berg, Public Citizen
- Leann Caron, Woodlands County
- Deb Edney, Local Logging Contractor
- Dale Holub, Town of Swan Hills
- Alex Manweiler, Trailblazers Snowmobile Club
- Ken Porter, Alexander Forest Services
- Don Price, Burlington Resources
- Carmelle Seabrook, Public Citizen
- Trevor Thain, Mayor, Town of Whitecourt

Forest Advisory Committee (RFAC)* on a tour of its Forest Management Agreement (FMA) area. The trip, which included stops at an old-growth forest, a 35-year-old plantation, and new cutovers employing different regeneration strategies, was intended to give participants a first-hand look at management strategies in a forest setting.

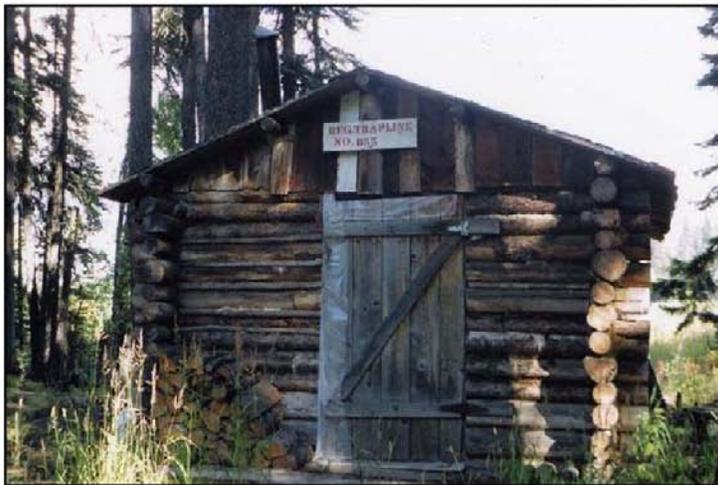
At each stop during the day, Millar Western outlined the challenges and opportunities of Millar Western to manage the forests according to its commitments in the DFMP. Much of the dialogue revolved around the long-term impacts on the landscape resulting not only from forestry but also oil and gas activity.

On one of its first stops, the group looked at the challenges of meeting reforestation strategies and provincial regeneration standards, and discussed the role of herbicides, an issue that has been of particular interest to the PPG. Participants saw that, although the sites had been planted and treated with herbicides at the same time, they exhibited different results, due largely to variations in the site index, a measure of the

PPG Field Trip

*Ray Hilts
Planning Supervisor
Millar Western*

On September 8th, 2005, Millar Western hosted the Public Participation Group (PPG) and the Regional



One of the informal stops during the PPG Field Trip was at this trapper cabin on the FMA area.

site's productivity, and the level of vegetation competition.

At another stop, the group had an opportunity to visit one of the oldest plantations in the company's FMA area, an area originally harvested by Millar Western in the late 1960's but silviculturally treated by the Alberta Forest Service, which in those days was responsible for reforestation. While the block had many tree and plant species, it did not contain much merchantable timber and was not contributing to the overall timber production strategy, reflecting the need for active management of plantations to produce commercially viable trees.

As well as visiting two areas that were thinned to improve the health and vigour of trees, the delegation toured some research sites, including a visit to a weir installation that was constructed under the auspices of the Forest Watershed and Riparian Disturbance (FORWARD) research project. FORWARD is assessing timber harvesting impacts on water quantity and quality in the Millar Western FMA area.

The day was capped off with a visit to a 140-year-old pine stand which, in boreal forest timelines, is considered old growth. This stop, meant to underline the need to represent all age classes in forest planning, prompted a lively discussion about the value society places on these types of stands.

The PPG and RFAC members said they enjoyed their day "in the bush",



Open House Invitation

2007 – 2016 Detailed Forest Management Plan

"An opportunity like this only comes along every ten years..."

The focus of this round of open houses will be to present the spatial harvest sequence and various management strategies that will be used to address identified values and objectives. Staff from Millar Western will be on hand to explain the visual displays, provide handouts, answer questions, and most importantly, to receive feedback on the approach that Millar Western is taking to forest planning and operations. Staff from Alberta Sustainable Resource Development will also be in attendance.

Everyone is invited and encouraged to attend and to provide feedback and input.

Location/Timing:

Swan Hills, Council Chambers – March 14, 2006, 6:00 – 9:00 PM

Ft. Assiniboine, Museum – March 15, 2006, 6:00–9:00 PM

Whitecourt, Travelodge – March 16, 2006, 6:00–9:00 PM

For more information on the Open Houses, please contact:

Ray Hilts
Planning Supervisor
(780) 778-2221 Ext. 2104
Rhilts@millarwestern.com

Louise Riopel
Communications Manager
(780) 486-8270
Lriopel@millarwestern.com

indicating that the day's observations and discussion will enhance their ability to carry out their respective roles more effectively.

** The RFAC is a public advisory team that advises four Whitecourt area forestry companies, including Millar Western, on forest management issues.*

FEDA Update

Jerry Bauer
Jerry Bauer Consulting Ltd.
PPG Facilitator

As was reported in the July 2004 issue of this newsletter, Millar Western entered into a Forestry and Eco-

conomic Development Agreement (FEDA) with the Alexis Nakota Sioux Nation in May 2004. As part of the agreement, an Environmental Co-Stewardship Committee (ECSC), comprising representation from both signatories and Aboriginal Affairs and Northern Development, was formed to review and guide Millar Western's operations in the Alexis Nakota Sioux Nation's traditional territory and to provide an opportunity for input into the DFMP. Since its formation, the ECSC's role has been expanded to include responsibility for implementing FEDA. The committee is now in the process of



Left to right: Rob Merrifield, Yellowhead MP, Mac Millar, President and CEO of Millar Western Forest Products Ltd., and Chief Roderic Alexis of the Alexis Nakota Sioux Nation.

developing and completing a number of action plans to address and carry out the commitments in the FEDA.

At its most recent meeting on January 11, 2006, the ECSC met with Chief Roderic Alexis and Council at Glenevis, where Millar Western's Chief Forester, Jonathan Russell, provided an overview of FEDA and an update on the work of the ECSC. Mark Handel, Fire Prevention Supervisor with Millar Western, was also on hand to give a presentation on Initial Attack Crew criteria, with a view to involving band members in Millar Western's fire prevention efforts within its FMA area.

One of the meeting's outcomes was a commitment to hold cultural awareness training for Millar Western employees, starting with the Woodlands group in the spring of 2006. The intent is to increase Millar Western's knowledge of the history and culture of the Alexis Nakota Sioux First Nation, so that it may be more sensitive to aboriginal concerns when carrying out operations in traditional areas.

After Jonathan Russell provided an update on the DFMP, the discussion turned to trapping, which emerged as the lead concern for the group. Given the need to clarify some of the issues relating to trapping, the ECSC promised to invite representatives from the provincial government and the Alberta Forest Products Association to its next meeting in March, where they will be asked to provide the provincial perspective on trapping policy and company requirements for consultation. As well, Ray Hiltz, Millar Western's Forest Planning Supervisor, has agreed to meet with all Alexis trappers to explain how the spatial harvesting sequence will affect their respective traplines. Furthermore, the ECSC, with advice from the government and AFPA, will work to develop a protocol for future transfers of traplines, to ensure they stay within the community.

Both Millar Western and the Alexis are encouraged by the progress made at recent meetings and are confident that FEDA and the ECSC will be forces for enhanced cooperation and positive change in the areas of envi-

ronmental stewardship and economic development.

ECSC

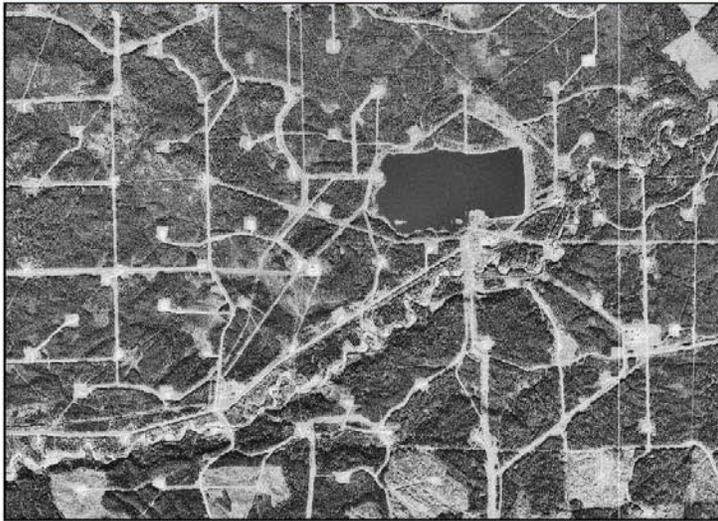
- Darwin Alexis, Councilor, Alexis Nakota Sioux Nation
- Peter Alexis, Alexis Nakota Sioux Nation
- Jonathan Russell, Chief Forester, Millar Western
- Dave Wall, Woodlands Manager, Millar Western
- Jamie Honda-McNeil, Manager of Traditional Use, Aboriginal Affairs and Northern Development,
- Jerry Bauer, Facilitator

FEATURE ARTICLES

Modelling Oil & Gas Drilling Effort in Alberta

*Michael Habteyonas
Dept. of Rural Economy
University of Alberta*

Oil and gas activities in Alberta are among the major drivers of the provincial economy. Increasingly, exploration and production are being carried out in previously undeveloped northern regions of the province. The consequences of such industrial expansion into the boreal forest region of Alberta are many and visible -- seismic lines, pipelines, well sites, and access roads appear with growing frequency and are becoming a cause for concern as more and more of Alberta's landscape is accessed. As well as causing ecological impacts on the landscape, energy sector activities are also affecting non-energy sectors,



Aerial photo showing impact of oil and gas activity where Millar Western operates. For perspective, each of the well sites, shown as squares, is approximately 100 x 100 metres, or one hectare, in size.

such as forestry.

Yet, for an activity that has wide-reaching effects on other sectors of the economy and the boreal ecosystem, little is known about the spatial and temporal behavior of the energy sector in the province. Both theoretical and empirical work is lacking on how energy sector exploration unfolds on the landscape. Understanding such behavior has key implications for land-use management and conservation of ecosystems, and is a pre-requisite to formulating policies to manage cumulative effects of industrial activity in Alberta.

With the aim of filling this information void, we will be undertaking a study to better understand, from an empirical perspective, how drilling effort is related to both the spatial locations of reserves and industry infrastructure, and the temporal effects of price changes and technology. Since drilling effort is measured in terms of the number of wells drilled in a certain township over time, we will use a spatial economet-

ric modelling approach to investigate the factors that influence the location of oil and gas wells in Alberta. Specifically, spatial regression methods will be used to model the number of oil and gas wells drilled between 1980 and 2003 in Alberta based on

spatial features of the industry, industrial footprint variables, underlying reserves, and economic variables.

Preliminary results based on a pilot study show that the resulting model appears to capture the historical behavior well. The strongest predictors were a one-year lag of price and the density of pipelines, both of which have a positive influence on drilling effort. Advances in prediction functions for spatial regressions will enhance our ability to use models such as these to simulate the timing and extent of oil and gas development in the boreal forest of Alberta.

This study is an integral part of a larger project entitled *A Bioregional Assessment of Sustainable Forest Management*, administered by the Boreal Ecology and Economics Synthesis Team (BEEST) and funded by the Sustainable Forest Management Network (SFMN). The aim of the project is to identify the impact of human, ecological, and other socio-economic activities on the biodiversity of the boreal plains. Different

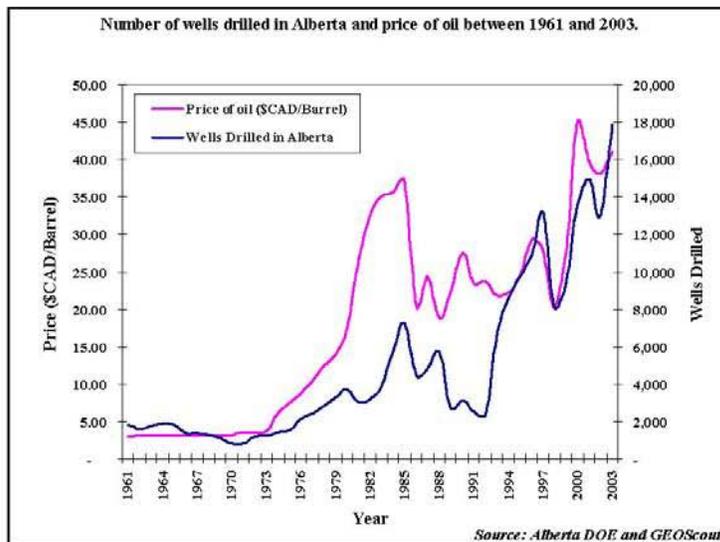


Chart showing correlation between drilling effort and price of oil.

sectors of the economy, including forestry, oil and gas and agriculture, are being considered. Our study will contribute to the larger project by identifying the impacts of oil and gas activities on the landscape of Alberta, specifically by simulating future oil and gas wells drilled on the landscape and identifying possible ecological impacts arising from these activities.



Developing the Preferred Forest Management Strategy

*Ted Gooding
The Forestry Corp.*

The Preferred Forest Management Strategy (PFMS) is a required component of the DFMP, describing the management strategy Millar Western proposes to implement over the 2007 – 2016 period. Arriving at a satisfactory PFMS is an involved, many-faceted process, requiring inputs such as a net landbase with yield curves, VOITs and a spatial harvest sequence, and significant computer analysis and modelling capabilities. This article focuses on defining VOITs and how they are incorporated into the PFMS using a process known as *trade-off analysis*.

VOITs

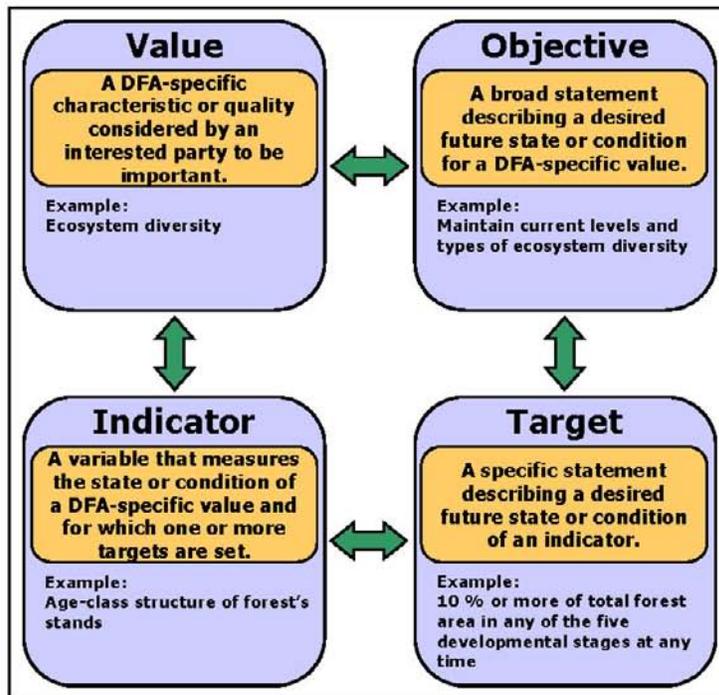
A VOIT is essentially a management objective that must be accommodated within the DFMP. A VOIT comprises four elements: a *value*, or

something deemed to be important; an *objective*, or a goal you want to achieve; an *indicator* – how you will measure whether you are meeting your objective; and a defined *target*, or a specific desired state. To illustrate, think of VOITs in terms of meeting a New Year’s resolution. Say, for example, you place value on being healthy and set an objective of losing weight. Your method of measuring your success or failure, your indicator, would be the pounds you’ve lost or gained. Your target, then, would be the exact amount of weight you want to lose – say 20 lbs.

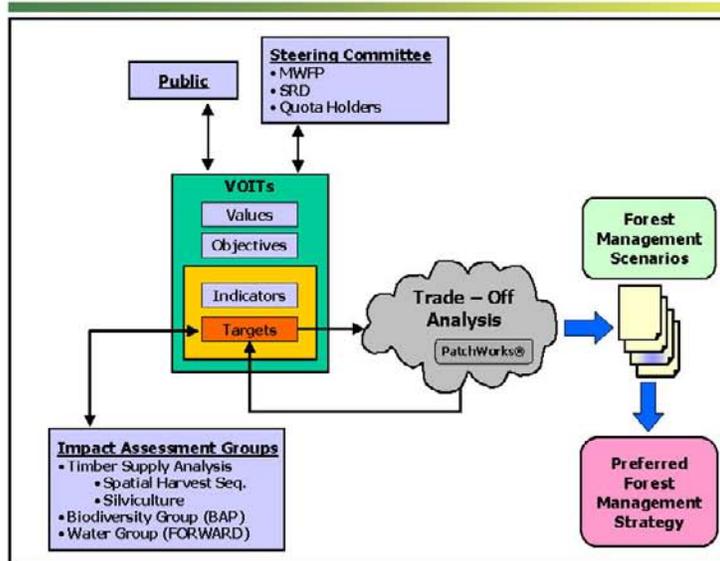
VOITs, as they relate to the DFMP, are developed by Millar Western, the government, and a variety of stakeholders, including the public and other forest products companies that operate in Western’s Forest Management Agreement (FMA) area. The

VOIT for soil productivity, for example, is pre-defined by SRD. The objective here is to minimize the impact of activities relating to road building and bared areas in the forest, which is measured by compliance with operating ground rules. The target for this objective is to have less than 5% soil exposure within the Defined Forest Area. This is an operational-level VOIT, as opposed to a strategic-level VOIT and therefore has no impact on the DFMP modelling process.

While some VOITs are fairly clear and straightforward, others are difficult to fully define, because they require a significant amount of analysis before meaningful targets can be assigned to them. Take, for example, the value of landscape-scale biodiversity and its objective of maintaining biodiversity by retaining the



Definitions and examples and inter-relationships between VOITs.



Simplified flow of the process used to define the VOITs and determine the Preferred Forest Management Strategy.

full range of cover types and seral stages. In order to define a target for how much of the landbase it wants to retain as old, mature and young forest over a 200-year period, Millar Western must first define the age categories for each species group and then determine the current and historical natural range of variation in the areas occupied by these age categories and species.

Trade-off Analysis

Once the indicators and approximate targets or target ranges are set, they can be modelled using timber-supply analysis tools, to see what impact they will have on other VOITs. This is the first step in trade-off analysis – a difficult exercise that attempts to balance numerous timber and non-timber values. The goal of this process is to achieve a reasonable balance for all the targets. The fact that every set target has the potential to impact all the other targets makes this a highly complex give-and-take

undertaking. For example, to accommodate a high old-growth area retention target, you sacrifice annual allowable cut, since old-growth stands generally contain the greatest volume.

The trade-off analysis is an iterative process that involves the timber supply analysis impact assessment groups (TSA IAG), including the biodiversity group (BAP) and the water group (FORWARD). They start by modelling wide target ranges to evaluate the interactions between the values, then systematically narrow the spreads until a target value or reasonable range is set. Millar Western then presents these targets to stakeholders for feedback and input, continuing to modify them until a satisfactory balance between timber and non-timber values is achieved. All targets are then monitored and reported over the DFMP horizon. This target summary, combined with a spatial harvest sequence - the operational harvest schedule for the

first 20 years of the planning horizon - is referred to as the forest management scenario.

Preferred Forest Management Strategy

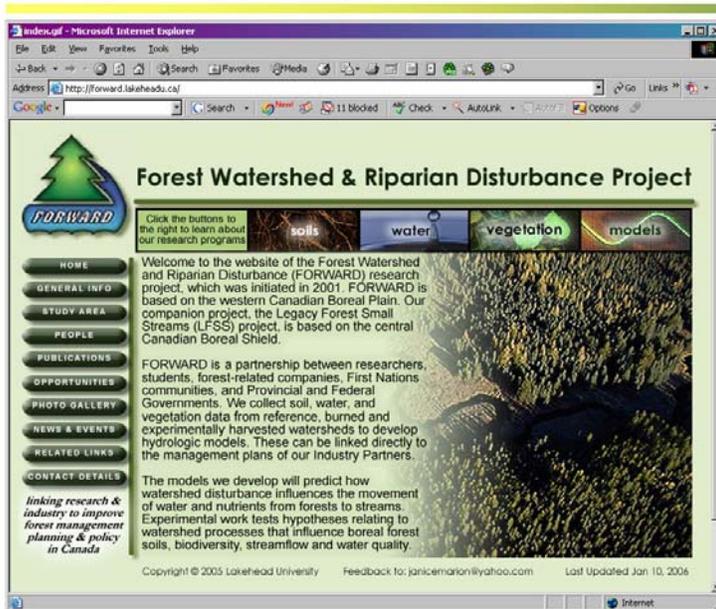
The Preferred Forest Management Strategy is a strategy that delicately balances Millar Western's fibre requirements with the need to address other forest values as defined by the province, the public and other interested stakeholders. The strategy finally chosen represents the forest management scenario that most appropriately achieves this balance.

EXTRAS...

FORWARD Ph.D. Student Receives Award



Mohamed Nour, Ph.D. student with the FORWARD (Forest Watershed and Riparian Disturbance) project, has been awarded the Izaak Walter Killam Memorial Scholarship. Recipients of this award are deemed likely to contribute to the advancement of learning and to win distinction in their profession. In addition, Mohamed also received the Dorothy J. Killam Memorial Graduate Prize



New FORWARD website.

as the most outstanding Killam Memorial Scholar in Engineering, Mathematics and Physical Sciences.

Mohamed earned his B.Sc. in Civil Engineering from Cairo University in Cairo, Egypt. He began his graduate career at the American University in Cairo, where he received his M.Sc. in Environmental Engineering. Mohamed has gained expertise in water quality modelling of natural systems, environmental chemistry and industrial wastewater treatment. In addition, he has worked as a lecturer assistant in the Irrigation and Hydraulics Department at Cairo University for two years. Mohamed joined the FORWARD project in 2002 as a Ph.D. student, where his focus has been primarily in the application of Artificial Neural Networks (ANN) in watershed management using remotely sensed data.

New FORWARD Website

The FORWARD group has launched their new website:

<http://forward.lakeheadu.ca>

This site provides a wealth of information about the project's mandate, areas of interest, participants, news and events, as well as other developments.

UPCOMING EVENTS

Open Houses

Don't forget Millar Western's upcoming three open houses on March 14-16 in Swan Hills, Ft. Assiniboine and Whitecourt, respectively. The purpose of this round of open houses will be to present the proposed spa-

tial harvest sequence, as well as the management strategies that have been developed to address the values and objectives identified by stakeholders.



FORWARD Conference

Mark June 14 and 15 on your calendars, the dates for this year's FORWARD field day and conference in Thunder Bay. More details will be provided in the next newsletter.

Next Newsletter

The next DFMP newsletter will be distributed in April, and will contain feature articles on the March open houses and updates on the status of the various planning teams' progress.

Contact Information

Millar Western Forest Products Ltd.
Wood Products Division
5504-52 Street
Whitecourt, Alberta
T7S 1N2
www.millarwestern.com

Grant Burkell
grant_burkell@forcorp.com
780 452-5878

Jonathan Russell
jrussell@millarwestern.com
780 486-8227

Jerry Bauer
jerrybauer@xplonnet.com
780 532-0851



MILLAR WESTERN FOREST PRODUCTS LTD.

DFMP NEWSLETTER

2007 - 2016

Detailed Forest Management Plan

Issue Number 10, April 2006



CONTENTS

NEWS	1
Mountain Pine Beetle Update	1
Woodlands Department Undergoes Restructuring	1
STAKEHOLDERS	2
Trapping, Sustainability Among Key Issues at Open House	2
Trapping Concerns Addressed at ECSC Meeting	2
FEATURE ARTICLES	3
FORWARD: Creation of a Water Web for the DFMP Process	3
Update from the Landscape Projection Group	5
Completing the DFMP—The Home Stretch	7
UPCOMING EVENTS	8
FORWARD Conference	8
NEXT ISSUE	8
CORRECTION	8

NEWS

Mountain Pine Beetle Update

The mountain pine beetle infestation east of the Rocky Mountains is likely to have a considerable impact on Millar Western's DFMP as the development process for the plan heads into the home stretch. The absence of cold temperatures needed to halt the beetle's progress has Alberta's forest industry switching into an aggressive control mode, in an effort to prevent the widespread devastation seen in British Columbia's forests. Alberta Sustainable Resource Development (SRD) is currently carrying out survey and control operations in the Foothills, Smoky and Southern Rockies areas of the province, and, in its March 29 *Beetle Update*, reports that it has cut and burned over 9,000 trees.



Aerial view of mountain pine beetle damage in British Columbia.

In response to the growing threat, Millar Western is reworking its 10-year harvest plans to focus on susceptible pine stands. It has devel-

oped a number of scenarios, including one that would keep baseline harvest levels the same but concentrate on removing pine. Another scenario would see harvesting levels increase over 10 years, to encompass all mature lodgepole pine stands. Which strategy is ultimately chosen depends on several factors, including the short-term spread of the infestation, other area FMA responses to the pine beetle and, ultimately, the government's view as to what is in the best interests of the environment and the people of Alberta.

To keep abreast of developments, visit the SRD website (<http://www.srd.gov.ab.ca/forests/health/mpb.html>), where you can view weekly mountain pine beetle updates, as well as other information about the insect and efforts to control it.

Woodlands Department Undergoes Restructuring

On March 31, Trevor Wakelin, Millar Western's Director of Fibre Resources, announced a restructuring of the Woodlands group, to better respond to emerging events and issues, including the potential impact of the mountain pine beetle. As part of the realignment, David Wall will be returning to Boyle to serve as Boyle Woodlands Manager. Both Trevor and Chief Forester Jonathan Russell will be relocating to Whitecourt, while maintaining a presence in Edmonton. Reporting to Trevor, Jonathan will continue to lead the devel-

opment of the DFMP, as well as assuming responsibility for planning and silviculture. Trevor, meanwhile, will take charge of woodlands operations, including certification, safety and accounting. Jonathan can still be reached at his Edmonton office number as well as in Whitecourt at (780) 778-2221 (ext. 2134), or on his cell, (780) 974-0916.

STAKEHOLDERS

Trapping, sustainability among key issues at DFMP open houses

Louise Riopel, Millar Western

Trapping, forest sustainability, and the threat of the mountain pine beetle were some of the issues raised at the Millar Western DFMP open houses, held March 14-16 in the communities of Swan Hills, Ft. Assiniboine and Whitecourt. Over 65 people attended the in-person open houses,

and over one-hundred more visited the virtual open house, making them among the company's best attended public consultation events in recent years. A good cross-section of stakeholders, from trappers and loggers, to recreational users and government representatives, stopped by to learn more about DFMP requirements, the development process, and the company's harvesting plans for the next 20 years.

One of the strongest turnouts to the open houses was from trappers, who said they were increasingly concerned about the impact of heightened industrial activity in the forest on fur-bearer populations. With "maintaining habitat for high-value species" already a management objective, Millar Western will work with the plan development team to determine how best to accommodate the trappers' issues.

Trappers weren't the only ones to indicate concern over the cumulative impacts of a growing commercial

presence in the forests, particularly as oil and gas and coal-bed methane exploration expands throughout Millar Western's FMA region. Chief Forester Jonathan Russell indicated that these concerns underline the importance of integrated land-use management, an initiative Millar Western has been pursuing in the development of its latest DFMP, in an effort to better coordinate the activities of all forest users and minimize their combined footprint on the forest.

Another topic of interest at the open houses was the mountain pine beetle, which has been advancing steadily from the B.C. interior into the eastern slopes region of the Rocky Mountains. (See Beetle article on page 1). Rounding out the list of issues raised at the open houses were logging-truck safety, herbicide use, recreational access, private-land buffers, impact of logging on farming and riparian areas, size of trees being cut, and protection of wildlife habitat.

Depending on the type of issue raised, Millar Western will either follow up directly with the individuals who raised them and/or address the concern within the DFMP, either by adding or modifying current management objectives.

The virtual open house at www.millarwestern.com/openhouse will remain open until the end of April.

Trapping Concerns Addressed at ECSC Meeting

Jerry Bauer, Jerry Bauer Consulting Ltd.

As reported in the last newsletter, trapping was the predominant issue when the Environmental Co-



Consultant Jerry Bauer and Millar Western's Ray Hiltz (left) review spatial harvesting sequences with trappers at Ft. Assiniboine open house.



Ability to trap is essential to maintaining culture, says the Alexis Nakota Sioux Nation at recent ECSC meeting.

Stewardship Committee (ECSC) gathered on January 11, 2006, for a regular committee meeting, followed by a meeting with the Chief and Councilors. In an effort to address concerns raised at those events, the agenda for the next ECSC meeting, held in Whitecourt on March 15, was given over almost entirely to trapping. The ECSC invited several experts to provide more information on the issue, including Darrell Walde, Alberta Forest Products Association representative on the Board of the Trappers Compensation Program; Greg Gilbertson, District Fish and Wildlife Officer in Whitecourt; and Dennis Driscoll of Consultation and Aboriginal Relations, Alberta Sustainable Resource Development, in Edmonton, who addressed issues around ownership, cultural/tradition uses of trap lines, trap-line cabins and subsistence trapping.

One of the main messages coming from Darrell Walde's presentation

on the Trappers' Compensation Program (TCP) was that it is in everyone's interest to try to avoid or at least mitigate any potential impacts on trap lines before industrial activity begins. While companies have an obligation to communicate with trappers, said Walde, trappers also have a responsibility to open their mail and respond in a timely fashion. If damage does occur or livelihoods are affected, then trappers should first talk to the companies working in the area in an effort to resolve issues at a local level, before bringing them to the compensation program, which only adjudicates claims twice a year.

On the issue of trap-line transfers, Fish and Wildlife Officer Gilbertson explained that, because they exist on Crown lands, trap lines cannot be owned and therefore cannot be bought and sold. He said that government policy states that a status line must stay a status line, unless the band supports movement to a

non-native person. Responding to grievances raised at the meeting, Gilbertson said that he would advise the Alexis Nakota Sioux Nation (Alexis) on how to pursue what they view to be unauthorized transfers that took place in the past. To avoid similar problems in the future, he suggested that trap-line holders make their transfer intentions known in a will or similar document, to ensure their wishes are honored after they pass on. As for subsistence trapping, Gilbertson defined it as trapping for food, explaining that no part of the animal can be sold, even if it is rendered into another product, like clothing. He qualified his statement by adding that the definition continues to change and evolve through the courts.

All in all, the discussions not only helped to clarify a great many issues around trapping but also identified areas for the ECSC to pursue both with the TCP board and the Alberta government. The discussions also underscored the importance of trapping to the Alexis and the need to accommodate this activity within the DFMP planning process.

FEATURE ARTICLES

FORWARD: Creation of a Water Web for the DFMP Process

*Article by Ellie Prepas, Lakehead
University; Photos by Janice Burke*

In pursuing a more ecological approach to forest management, as required by the Alberta government, MWFP has sought to forge linkages between land and water management through its support of the Forest Watershed and Riparian Disturbance



FORWARD Research Assistant Shawn Pinder collecting water sample from a stream in MWFP FMA area.

(FORWARD) Project. This project, which was initiated in 2001, aims to bring together academic, industrial and regulatory disciplines to monitor natural and disturbed (e.g. wildfire, forest harvesting) areas of the boreal forest, to develop more comprehensive forestry planning models. Insofar as MWFP's DFMP is concerned, the FORWARD group will be setting water quantity and quality targets for trade-off analysis, thus bringing an "aquatic" perspective to the planning process.

Update

To date, the FORWARD group has focused on gathering data on the small streams that drain the thousands of small watersheds of the land base in the Millar Western FMA area. Small streams are the most sensitive indicators of surface water quality changes and, therefore, the logical place to study the effects of disturbances. Over the past year, the group has made significant progress toward developing mapping protocols and hydrological models to in-

corporate runoff and water quality into forest management planning. To satisfy the water component of the DFMP, we are focusing on data collection and mapping, and modelling

and look-up table development. The group is also planning for the next five years of FORWARD, given the recent announcement of renewed funding for the project.

Data and Mapping

The FORWARD group has continued to work diligently to collect data on weather, soils, streamflow, and stream-water quality in 16 1st-order (~ 6 km²) to 3rd-order (~ 150 km²) watersheds. Harvesting has been conducted in five of these watersheds, while wildfire has occurred in four. Seven watersheds are relatively undisturbed (Figure 1).

The group has created a map of all small watersheds with streams that flow into Millar Western's FMA area. These streams, which number approximately 2,000, comprise "the water web" and cover an area twice the size of the FMA area, or close to 12,000 km².

The group's second challenge has

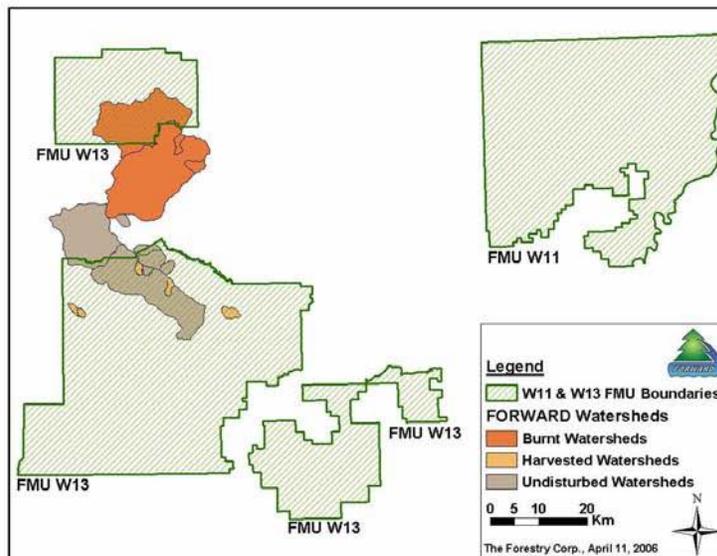


Figure 1. FORWARD watersheds by disturbance type, in relation to the Forest Management Units in which MWFP FMA is contained.



FORWARD field team processes water samples. The enclosure in the background is used to permit measurements of water flow in the winter.

been to construct a corresponding map of the soils present within the water web. To do this, they have used the regional soil-and-vegetation inventories collected by MWFP and other forest companies (ANC, Buchanan Lumber, Blue Ridge Lumber, Slave Lake Pulp, Wanderwell and Weyerhaeuser) whose land base forms part of the water web. Knowing the soil characteristics and distribution over the landscape is critical for understanding how water (i.e., rain and snowmelt) moves overland or underground, and what chemical constituents it acquires along its path to the stream channel. By knowing the soil types, the group can monitor changes in soil characteristics, to see how disturbances have affected water movement, erosion, and nutrient cycling.

Modeling and Look-Up Table Development

For the current planning cycle, the field data described above are being

used to adapt the Soil and Water Assessment Tool (SWAT) model for boreal forest conditions and to couple it with the plant growth model ALMANAC. The output from these modelling programs is used to populate a look-up table of runoff coefficients (runoff corrected to precipitation) for any given slope, vegetation, and soil attributes in forest polygons. Runoff coefficients are then linked to the industrial land base within the trade-off assessment process. Any significant changes from the baseline conditions, serve as potential constraints on timber harvesting.

FORWARD II

As well as contributing to the Millar Western DFMP, the FORWARD group is looking ahead to the next five years by developing a plan to simplify and extend the water component of the forest planning process. The question the group will endeavor to answer during the next phase is this: "How much will

stream flow and water quality change with any particular harvesting pattern in the watershed?" To address this, we will be using the soil and water web in combination with experimental field data, the modelling effort and experience of the team in the region. The results will be key to helping Millar Western and other forest companies make more informed choices with respect to choosing harvesting patterns that will optimize water quality and quantity within their FMAs.

For more information, visit the FORWARD website at <http://forward.lakeheadu.ca>.

Update from the Landscape Projection Group

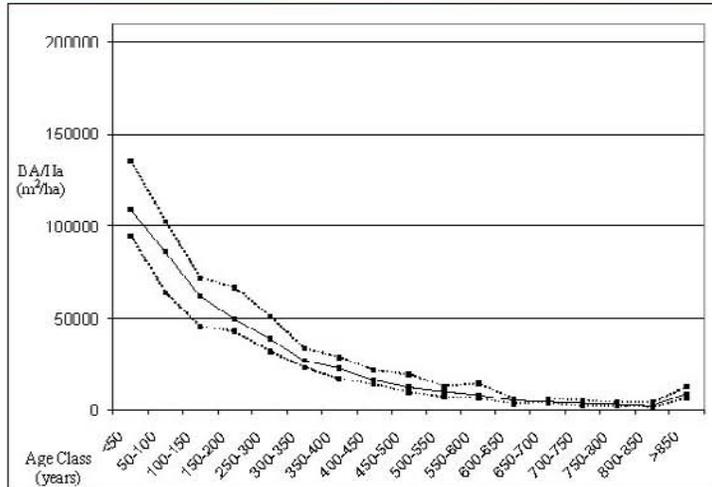
Stephen Yamasaki, IQAFF

The landscape modelling team has completed a first set of simulations, looking at the pattern and structure of forests under the influence of simulated natural disturbance regimes. When trying to describe the fire regime for the Forest Management Agreement (FMA) area, it is possible to come up with different estimates for the fire-return interval (the amount of time required to burn the entire landscape once, with no overlaps), depending on the assumptions that are made and the data that are included in the analysis. Therefore, three different estimates of the fire-return interval were applied to the simulation: 190 years (the base case, estimated from Alberta Sustainable Resource Development data); 95 years (twice the area burned annually); and 380 years (half the area burned annually). Results indicate that the assumptions made about the fire-return interval will have a significant impact on the age-class distribution that is obtained after 800 years of simulation. There-

fore, we will need to look closely at the assumptions that are made about the fire regime. Also, historical aerial photography of the FMA may help to derive a more precise estimate of the fire regime.

A working version of the mechanistic fire model is also up and running. This model combines knowledge developed by the Canadian Forest Service (CFS) with data from Global Circulation Models (used to predict future climate) and the MWFP Whitecourt FMA to generate projections of fire regimes under climate change conditions. We have been communicating with the CFS team responsible for development of the original Fire Behaviour Prediction System (FBPS) model and are looking into developing model verification protocols for our version of the fire model.

The team has also completed a model for the behaviour of the oil and gas industry on the landscape. The model simulated the development of seismic lines, as well as the establishment of wells and pipelines on the landscape. With a few simple rules for the connection of well sites

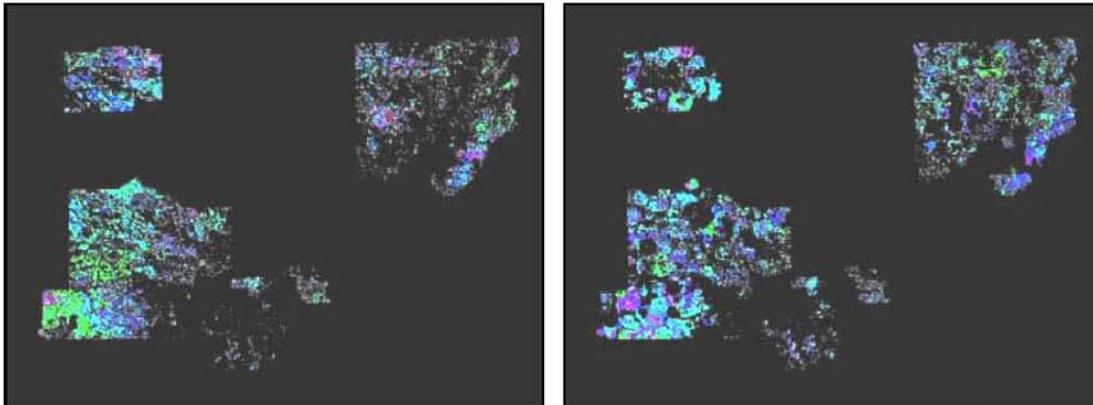


Basal area distribution by age class under the *base case fire regime*, estimated from Alberta SRD fire history. Graphs show median value of 20 runs (solid line) and the 90 percent confidence intervals on the median (dotted lines).

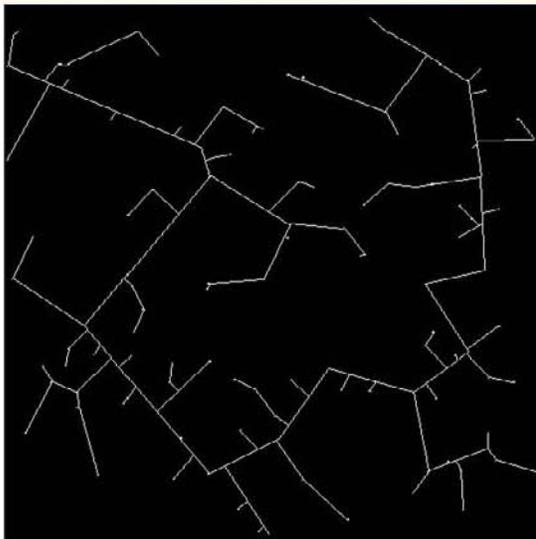
through a network of pipelines, the team has created a model that simulates oil and gas with a surprisingly high level of realism.

The impact of climate change on stands (deciduous, coniferous, and mixed) is complete, and the data are being analyzed. Preliminary analysis of this work, which was carried out

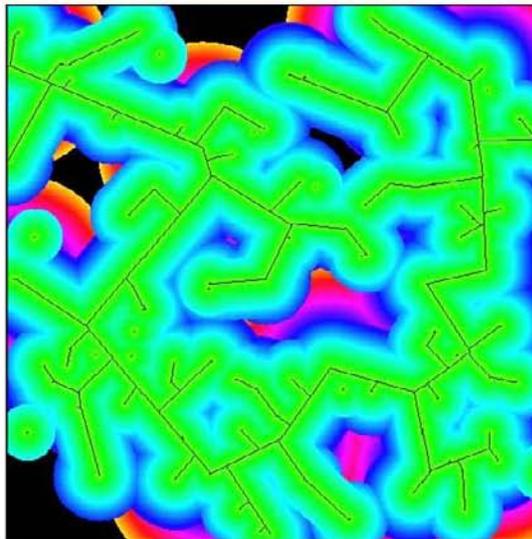
by Robin Duchesneau with the FORECAST ecosystem model, indicates that climate change can influence not only the wood volume yields of stands, but also their species composition, with certain species favored over others during stand development. These results have been integrated into the landscape



Representations of the landscape area covered by lodgepole pine. Colored areas indicates basal area (m^2/ha): black 0; greens 1-7; blues 8-21; purple/pink 22-29; red/orange 30-39; yellow 40. Map on the left represents current day distribution, whereas map on the right is distribution after 800 years of base case fire regime natural disturbance regime simulation.



A network of pipelines generated by the oil and gas sub-model. This sub-model will be coupled to the harvesting, wildfire, natural regeneration, tree-planting, and succession sub-models in order to project landscape states under current and climate change conditions.



Raster (map made up of a grid of equally spaced cells) of "distance to the nearest well site"; this raster, generated by the oil and gas sub-model, is used to establish the shortest distance between a new well and existing infrastructure, in order to determine the location of the pipeline that links the two.

model, and soon we will be able to look at the modelled impacts of climate change on landscape species composition.

This is a very exciting time for the group, since this kind of work has never been undertaken, and no one is entirely certain what to expect in terms of climate change impacts at the landscape scale.

Completing the DFMP—The Home Stretch

Grant Burkell, The Forestry Corp.

Two-and-a-half years after the process started, MWFP is in the final stretch of developing its DFMP. As several key deadlines approach (see Figure 2), the pace of activity increases, as all groups work to complete their contributions on time.

As discussed in the article 'Developing the Preferred Forest Management Strategy (PFMS)' in Issue 9 (February 2006) of the DFMP newsletter, the PFMS is the end product of technical, management and public inputs. This is the overall strategy that MWFP plans to implement over the 2007 – 2016 planning horizon. Originally, the PFMS was scheduled to be completed by April 2006 but has been delayed until June 2006, to allow for the incorporation of a strategy to mitigate potential impacts of mountain pine beetle.

Upon completion of the PFMS, MWFP will present the strategy to the Public Participation Group (PPG) for comments. After this input has been received, the DFMP is essentially ready to be written. No single person writes the DFMP; instead, many individuals contribute to its

composition, bringing their expertise to bear on its various components.

Editing and assembly of the document falls to MWFP, which strives to produce a cohesive, consistent document that, once finished, will be several large bound volumes in length.

Next, the entire draft DFMP will be forwarded to the PPG for their review and feedback. While MWFP will attempt to address all PPG comments before finalizing the draft, it may have to delay dealing with more complex issues until after the formal submission and presentation to SRD in November 2006.

If everything is in order, SRD will provide their approval with conditions by May 2007. At this time, MWFP will implement the plan, but will have until August 2007 to revise it to address the short-term condi-

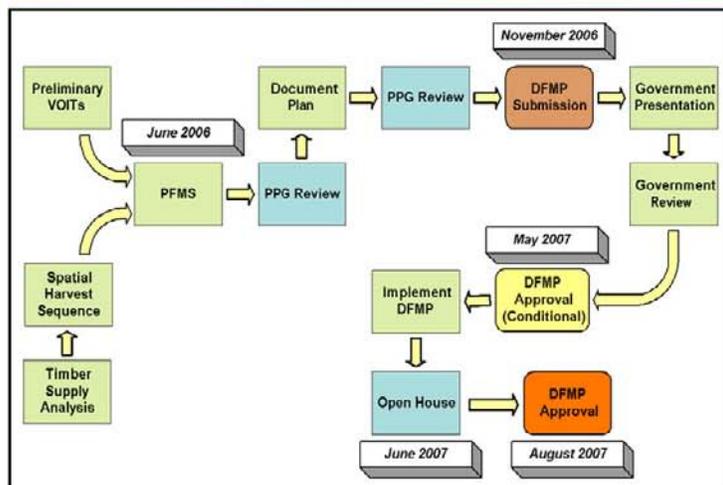


Figure 2. DFMP phases and associated completion dates.

tions, and submit it to SRD. Some of the approval conditions may require over a year to adequately address.

Following SRD's approval of the DFMP, MWFP will hold a third and final open house to present the plan to the general public. This open house, which is tentatively scheduled for September 2007, will bring the entire process to a close.

UPCOMING EVENTS

FORWARD Workshop Reflects on Successes, Looks to Future

The intent of the upcoming FORWARD Workshop, being held in Thunder Bay June 14-15, is to showcase the results of the FORWARD team's collaborative efforts to further watershed management in the boreal forest during first five-year phase of FORWARD and look ahead to FOR-

WARD II. The two-day event will begin with a field tour to the Legacy Forest Small Streams (LFSS) watersheds, a companion project to FORWARD I and an integral part of FORWARD II. The tour will highlight the extensive infrastructure in the study watersheds and some of the key differences between watersheds in north-western Ontario and the Whitecourt area.

On Day 2, the workshop will move indoors, where a wide array of presenters will place the FORWARD projects within the context of the current regulatory environment. Students, researchers and industry participants will share their findings from field projects in the Millar Western FMA area and demonstrate the performance of water-based models developed from these field data. Early-phase findings from the LFSS watersheds will also be featured.

This workshop will be of interest to anyone involved in safeguarding aquatic features in the boreal forest, particularly those working in the academic, regulatory or industrial sec-

tors. For more information, visit <http://forward.lakeheadu.ca> or call Ellie Prepas at (807) 343-8623 or Virginia Antoniak at (807) 766-7126.

NEXT ISSUE

As many groups wrap up their work, the next issue, which will be published in the fall of 2006, will focus on the chosen management objectives and targets, as well as report on other news and developments associated with the DFMP process.

CORRECTION

Issue 9 of the DFMP Newsletter should have listed Nelson Alexis as a member of the ECSC, not Peter. We wish to thank Darwin Alexis for bringing this error to our attention and extend our apologies to Nelson for the omission.

Contact Information

Millar Western Forest Products Ltd.
Wood Products Division
5504-52 Street
Whitecourt, Alberta
T7S 1N2
www.millarwestern.com

Jonathan Russell
jrussell@millarwestern.com
(780) 778-2221 xtn. 2134

Grant Burkell
grant_burkell@forcorp.com
(780) 452-5878

Jerry Bauer
jerrybauer@explornet.com
(780) 532-0851

Editor
Louise Riopel
lriopel@millarwestern.com
(780) 486-8270