



MILLAR WESTERN FOREST PRODUCTS LTD.

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DFMP *Newsletter*

NUMBER 5, September 2004

Call For Photos!

If you have any photographs related to the development of the Detailed Forest Management Plan (e.g. people, research, forestry...) that you would like to publish in the DFMP Newsletter, please send them to us! Please include a brief description and the names of any people in the picture. Photographs may be in digital or print and can be sent to Gunnilla Nilsson (contact information on page 8).



Horse logging in the Athabasca Flats - Millar Western managed this low-land area along the Athabasca River for wildlife habitat and aesthetic values, between 1997 and 2001. Harvesting with horses employed local labor, and allowed for site-specific thinning treatments to maintain a continuous conifer cover along the river.

SECTION I: PUBLIC

Public Open House: November in Whitecourt

Millar Western is hosting a public open house in Whitecourt at the end of November, 2004. The exact location and time will be

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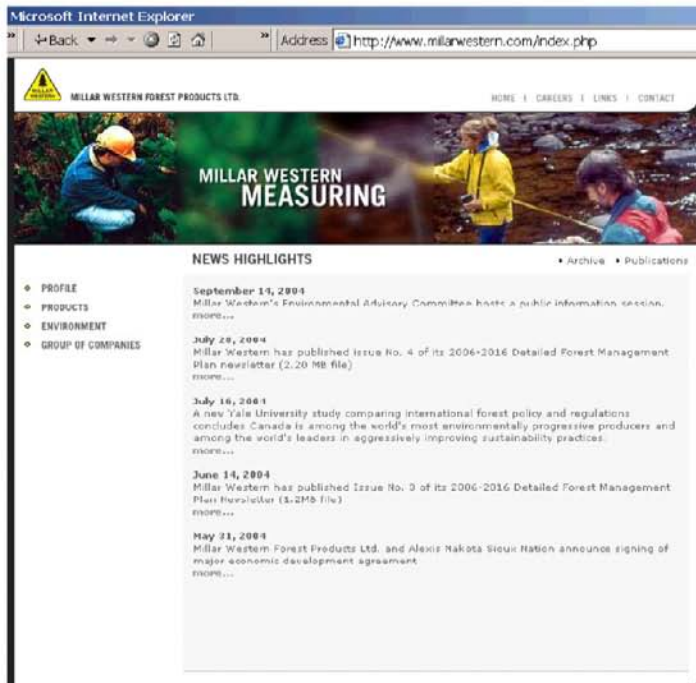
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Millar Western's corporate website can be found at www.millarwestern.com.

(CCCma), both temperature and atmospheric concentrations of carbon dioxide (CO₂) are likely to increase in Alberta's future. However, there are also many other potential impacts of global warming that may influence forest landscapes.

The Millar Western Climate Change Landscape Projection Group (LPG) recognizes the importance of identifying the major factors of climate change. (For background information on the Climate Change LPG, see issue number 3 of the DFMP Newsletter: *Millar Western FMA will serve as test area for global climate change research*.) The group is actively engaged in several exercises to explore some of the potential impacts of climate change. This article looks at one of these exercises: How future climate change may influence forest growth.

announced in local media several weeks prior to the event.

Please join us to provide your input into Millar Western's upcoming Detailed Forest Management Plan (DFMP).

Millar Western staff and representatives will provide attendees with information specific to the development of the DFMP, and background information regarding forest planning requirements in Alberta. This is an excellent forum to engage in discussion with Millar Western staff and DFMP planners, as well as with other industrial stakeholders and public interest groups. We

encourage you to ask questions and present your concerns.

Background on Planning Groups

Modeling Forest Vegetation Dynamics Under Climate Change

By: Robin Duchesneau

According to the various climate change scenarios developed by the Intergovernmental Panel on Climate Change (IPCC), as well as the modeling results from the Canadian Centre for Climate Modeling and Analysis



Source: <http://www.planet-earth.org/>

Predicting how forest growth will respond to climate change over long periods of time (the DFMP has a planning horizon of 200 years) represents a formidable challenge. To make progress, computer simulation models can



Source: <http://www.arb.ca.gov/knowzone/students/airpollu/airpolpage/whyis.htm>



Source: http://ese.cosm.sc.edu/env_sci/Impacts/Pollution/Air/Air_Pol_Intro.htm

Global warming is caused mainly by the use of fossil fuels, which releases greenhouse gases like carbon dioxide into the atmosphere.

be used to help with these predictions.

Traditionally, computer models to predict forest growth have been based on a "historical bioassay" - the record of tree growth over the past tree crop rotation. Unfortunately, predictions from these models are only valid if the growth conditions (e.g. soils, climate, biotic factors) of the future are similar to those of the past. Given the dynamic nature of natural ecosystems, this condition is rarely satisfied.

Alternatively, process-based models can be used to predict forest growth. These models are based on the physiological processes that govern tree growth. As such, process-based models can provide estimates of future growth where no records of past growth exist.

Finally, a third approach for modeling forest growth through time is to use hybrid-based models. Hybrid-based models incorpo-

rate the advantages of both process-based growth models and empirical growth models.

One such hybrid-based model is called FORECAST. The FORECAST forest ecosystem management simulation model is a hybrid-based model that can be used to project future forest growth. It uses a combination of existing forest growth data and physiological growth processes to project future forest biomass yield, as well as a variety of other ecosystem variables and social values, under a range of forest management conditions.

FORECAST has been used for various scientific modeling research projects and by several forest industries for exploring the effectiveness of alternative management scenarios. Additionally, because FORECAST incorporates numerous physiological processes, it is also useful for addressing issues related to climate change.

As such, FORECAST is currently being calibrated for Millar Western's landbase, which includes forests growing in the Upper and Lower Foothills and the Dry and Central Mixedwoods natural subregions. Moreover, calibration will be carried out at the smaller, ecosite level of the Alberta's ecosystem classification system. By doing so, it will be possible to account for the combined interaction of the many biophysical factors that dictate the availability of moisture and nutrients for plant growth - two important determinants of forest productivity.

Part of the calibration process involves assembling growth and yield data for each combination of natural subregion and ecosite, and utilizing these estimates to simulate forest growth across Millar Western's forest management area. Other important ecosystem processes that are driven by climate are also being incorporated into the FORECAST model; for instance, photosynthesis and soil decomposition.



New growth on a spruce seedling.

Once FORECAST is calibrated, the Climate Change LPG will run the model many times over to create hundreds of different possible future forest growth and yield projections under various climate change scenarios.

In addition to modelling the direct impacts of climate change on future vegetation change, the Climate Change LPG will also incorporate other future forest disturbances.

Impacts from future harvesting, wildfire, human settlement, and oil and gas development will be combined with the climate change scenarios. The dynamic interactions among these disturbances may have different impacts on vegetation change. Issue number 2 of the DFMP Newsletter describes the "landscape dynamics modeling" process that will be used to explore these interactions.

In conclusion, global climate change will have an effect on many environmental parameters that collectively influence forest

landscapes. To inform policy and management decisions, computer modeling exercises offer an interdisciplinary synthesis of information. Computer simulation modeling projects that integrate various forest stand and landscape dynamics are slowly moving towards the forefront of the forest management due to a growing recognition that forest ecosystems evolve under cumulative impacts, which may occur at different ecological scales. Equally important is the acknowledgment that predictions of forest growth and yield, and other forest values, may be unreliable if the impacts of climate change are not considered.

For more information, please contact Robin Duchesneau at the Institut Québécois d'Aménagement de la Forêt Feuillue (IQAFF): (819) 983-2206.

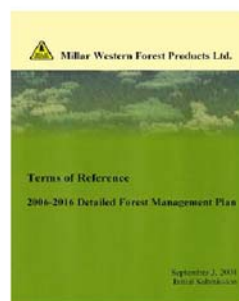
SECTION 2: MILLAR WESTERN

Volume Sampling Underway

The protocols for volume sampling have been submitted to the provincial government, and the 2004 summer field sampling program is well underway. Ecological data is being collected first while the forest is still green, and will be followed by volume sampling data collection.

Terms of Reference, Revised W11 Plan and Stewardship Report Submitted to SRD

The Terms of Reference (September 3, 2004) for the DFMP was submitted to Alberta Sustainable Resource Development (SRD) the beginning of September. The Terms of Reference is the schedule for the development of the DFMP and is subject to approval by the Manager of the Forest Planning Section in the Department of Sustainable Resource Development.



Upon receiving feedback from an initial submission to SRD, the Preliminary Forest Management Plan for FMU W11 was re-submitted with some minor changes and clarifications in the Timber Supply Analysis documentation (August 19, 2004). The 1997-2001 Stewardship Report (May 2004) was also resubmitted to SRD with minor corrections.

All three documents are available on Millar Western's FTP site for the DFMP.

SECTION 3: PLAN DEVELOPMENT TEAM

Modeling Watershed Disturbance in the Forest Environment

FORWARD 2004 Workshop

By: Ellie Prepas

Millar Western Forest Products Ltd. hosted the fourth annual Forest Watershed and Riparian Disturbance (FORWARD) Study workshop on June 9th, in Whitecourt, AB.

The meeting opened with a speech by Chief Roderick Alexis from the Alexis Nakota Sioux Nation, who emphasized the importance of a holistic approach to environmental management.

Workshop attendees included representatives from six forest-related companies in addition to Millar Western Forest Products Ltd.:

- Alberta Newsprint Company
- Alberta Pacific Forest Industries
- Blue Ridge Lumber Inc.
- Robert Mills Forestry
- Streamline Consulting
- The Forestry Corp.



Doug MacDonald happily joined the FORWARD research team this summer. On the left, Brian Wallach, Forester with Alberta Sustainable Resource Development in Whitecourt, studies one of the FORWARD research posters.

The Alberta Government had representatives from the departments of Sustainable Resource Development (SRD), Agriculture Food and Rural Development, and Alberta Environment.

Also attending were FORWARD Project researchers Dr. D. Smith, University of Alberta (UAB), Dr. G. Putz, University of Saskatchewan (USK), and Drs. E. Prepas and W. Meyer, Lakehead University (LU), as well as Ms. T. Anderson, Natural Sciences and Engineering Council of Canada (NSERC) and Dr. H. Kimmins, University of British Columbia (UBC).

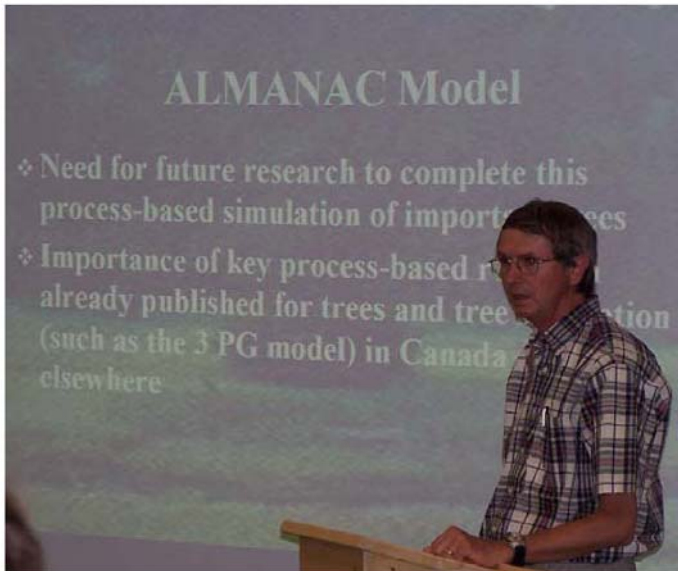
The workshop emphasized the short- (1 to 2 year) and medium- (5 year) term contributions of the FORWARD watershed model-

ling project to the Millar Western DFMP process.

The focus of the workshop was modelling the land-water interface. Keynote addresses were given by Drs. J. Arnold and J. Kiniry (USDA Agricultural Research Service) and Dr. R. Kolka (USDA Forest Service).

Initiatives linked to the FORWARD project include modifying the process-based Soil & Water Assessment Tool (SWAT) and ALMANAC simulation models for Boreal Plain hydrology and vegetation, respectively. The emphasis was on the process of model development and refinement in an industrial setting.

Current initiatives with model refinement (SWAT through USK)



Dr. Jim Kiniry from the United States Department of Agriculture discusses the ALMANAC (Agricultural Land Management Alternatives with Numerical Assessment Criteria) simulation model, which simulates plant growth.

and development (Artificial Neural Networks (ANN) through UAB) were introduced by Dr. D. Smith and Dr. G. Putz. Presentations on progress to date were given by doctoral candidates, Ms. R. McKeown (USK) and Mr. M. Nour (UAB), and master's candidate, Mr. A. Khan (UAB).

The history and vision for the university partners as part of this multi-sectoral project were presented by Dr. R. Pulkki (LU) and Dr. G. Taylor (UAB). Connections to policy initiatives in the Province of Alberta were presented by Mr. R. Jones and Mr. R. Stokes.

Linkages to detailed forest management planning (DFMP) were addressed by Mr. J. Russell, Chief Forester for Millar Western Forest Products Ltd. Dr. K.

McClain, Director of Science Policy and Strategy, Alberta

SRD, provided closing remarks.

Concurrent with oral presentations was a dynamic poster session, which showcased:

- the Millar Western DFMP;
- FORWARD sampling and monitoring infrastructure;
- aquatic, environmental and vegetation monitoring;
- wetland classification; and,
- ANN modelling.

In addition, pre- and post-workshop tours were given of field sites and infrastructure for the FORWARD project.

For more information on the FORWARD workshop or the FORWARD research project, please contact Dr. Ellie Prepas at Lakehead University: (807) 343-8623.



Workshop field tour participants viewed a FORWARD water monitoring station. Automated water samplers are programmed to collect samples at regular intervals, thus enabling the collection of storm water runoff. Data loggers record stage height and water temperature.



FORWARD workshop tour participants discuss one of the FORWARD water monitoring stations in Millar Western's FMA (Forest Management Agreement) area.

December DFMP Workshop

It has been almost a year since a workshop was held in Quebec to initiate the development of Millar Western's Detailed Forest Management Plan (DFMP). Since then, several new DFMP planning groups and committees have been initiated, and many new people have joined the DFMP Plan Development Team.

There has been a lot of progress made on the DFMP since last

November. Some of the Impact Assessment Groups and Landscape Projection Groups on the planning team already have preliminary results from their research and modeling exercises. As a next big step, Millar Western would like to assemble representatives from the planning team all together to discuss the DFMP.

Therefore, Millar Western is planning a DFMP Workshop for representatives from the Plan Development Team early this December in Edmonton or Whitecourt (to be determined). The pur-

pose of the workshop will be three-fold:

1. Present DFMP-related progress and products;
2. Discuss the integration and coordination of information/data among groups; and,
3. Develop detailed time lines.

Detailed clarification of the linkages among the groups (point 2) will probably be the most important outcome of the workshop. Representatives from the planning team have already been invited by email or fax. Detailed

information regarding the date, time, and location of the workshop will be forwarded to each individual as it becomes known.

Communications Committee News

The Communications Committee for the development of the DFMP, headed by Deb Choma at Millar Western, had their first official meeting on July 21st. The committee has begun work on a formal Communication Plan that includes guidelines for internal and external communications related to the development of the DFMP, as well as a Public Participation Plan for the development of the DFMP.

As a component of the public participation process, the committee will be meeting with a group of public representatives this fall to: 1) develop the framework for the public participation process, and; 2) review the Company's strategic direction for forest management.

The Communication Plan will incorporate this public input. The completed plan will be submitted to the Department of Sustainable Resource Development for review and approval, and will be made available to all members of the DFMP planning team and to the general public.

Another Communication Plan for the implementation (versus development) of the DFMP will be presented in the final DFMP document in 2006.

Local Forestry Companies Involved in DFMP

Spruceland Millworks, Mostowich Lumber Company, and Weyerhaeuser Company Ltd. are three forest products companies operating under quota agreements within Millar Western's FMA (Forest Management Agreement) area. A quota is a volume-based harvesting agreement between a forest company and the province; an FMA is an area-based agreement. In August, representatives from the DMFP Steering Committee met with representatives from the three companies to discuss their involvement in the development of the DMFP.

The companies will be represented on the Timber Supply Analysis Impact Assessment Group and will have direct input into the harvest planning and the DFMP.

Current Postings on FTP Site

The following documents are currently posted on the FTP site for DFMP Plan Development Team members:

- Millar Western Terms of Reference for the development of the DFMP;
- Alberta Forest Management Planning Manual;

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

- 2004 Volume Sampling Program document;
- Millar Western Preliminary Forest Management Plan for FMU W11;
- Millar Western Stewardship Report;
- Updated DFMP process flowchart ("PERT Chart");
- DFMP planning team meeting minutes and summaries;
- DFMP planning team contact information;
- DFMP Newsletters;
- Millar Western 2001 Permanent Sample Plot manual; and,
- Natural subregions boundaries (boundaries are soon to change; stay tuned....).

The FTP site for the DFMP has a new address. If you have not received the updated address by email, please contact Gunnilla Nilsson at The Forestry Corp. The login name and password have not changed.


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DFMP *Newsletter*

NUMBER 6, November 2004

DFMP Progress

The Detailed Forest Management Plan (DFMP) is due for completion in May 2006. So far we are on schedule. The planning groups are well into their analyses of timber supply, water, biodiversity, fire, climate change, human population, and oil and gas development. The December DFMP workshop (see page 8) will cement the relationships among these groups and lay the groundwork for the continued development of the DFMP. The public participation process is also

well underway with the upcoming Public Open House (page 2) and detailed input from the Public Participation Group. The DFMP workshop and the Public Open House will both be reviewed in the next issue of the DFMP Newsletter.

There are two feature articles in this issue. One article is on the implications of human population change on the Whitecourt forest (page 2). The other article looks at summer student Roshan Gervais's four-month experience working in the bush for the FORWARD water research project.



A wildfire went through the Virginia Hills in Millar Western's forest management area in 1998. Current sampling in the area will determine the extent of natural regeneration.

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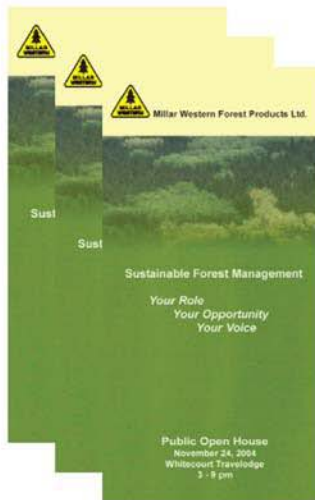
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SECTION I: PUBLIC

Open House Reminder

The Public Open House for the development of Millar Western's DFMP is being held at the Whitecourt Travel Lodge on November 24, from 3pm to 9pm.



This is an excellent forum to provide input into the development of the management plan, and to engage in discussion with Millar Western staff and DFMP planners, as well as other industrial stakeholders and public interest groups who may attend the open house.

Please come out and bring a friend or neighbor with you. This is your opportunity to have a role in the sustainable management of the Whitecourt forest.

Background on Planning Groups: *Human Population*

The Implications of Population Change on the Whitecourt Forest

*By: Richard Loreto and
Tom McCormack*

Demographic analysis is the study of human populations. In simple terms its focus is people. Demographers are interested in understanding the trends and market or public policy implications associated with:

- The natural increase in the population (i.e. the difference between births and deaths);
- The migration of people from one city or province to

another or between countries; and,

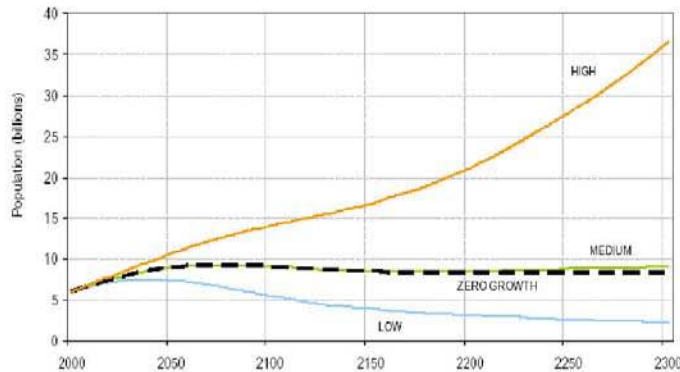
- The distribution in the population of characteristics such as age, gender, ethnicity, and race.

The most significant demographic trend in Canada (and the rest of the "developed" world as well as in China) is population aging. Population aging is a result of the "demographic transition", i.e., declining levels of fertility and mortality in lock step with increasing levels of economic growth and urbanization. In this situation, Canada's population is growing at a declining rate and more through international migration than net natural increase, a trend that will continue into the future. Indeed, within 20 years or so, our projections show that net international migration will be the only source of Canada's population growth.



To familiarize himself with the study area, Richard Loreto is all set for a helicopter tour of Millar Western's forest management area (June 2004).

Figure 1. World population according to different scenarios, 2000-2300



The United Nations projection of the world population to year 2300. High, medium and low scenarios considering different projections of fertility and mortality. Source: <http://www.un.org/esa/population/publications/longrange2/>

Alberta, Canada's youngest province, is not immune to the trend of population aging. For example, births have been declining in Alberta since 1983, and the province's population growth is primarily fuelled by inter-provincial migration, a trend that is related to Alberta's booming economy.

Demographers not only examine the past and the present but also the future. Population projections are based on scenarios typically built from a literature review of key driving forces (for example, technological change) and a baseline statistical analysis of past and current demographic factors -- fertility, mortality, migration, and age structure. The time frame for these projections can extend as long as 50 years, although it usually falls within a range of 10 to 25 years. However, recently the United Nations has developed population projections

for each global region and country to the year 2300.

Our contribution to Millar Western's Detailed Forest Management Plan is the development of a 200-year "most plausible" base case projection of population by age and gender, employment by detailed industry, and implied land use for the Whitecourt region. This base case projection will be developed taking into consideration probable future world and Canadian trends in the following factors:

- Climate change;
- Energy use and production
- Technological advancement
- Economic shifts (including international trade patterns and industrial restructuring);
- Demographic developments (including fertility, mortality, migration, and age structure); and,

- Socio-political shifts.

Then, to identify the greatest risks regarding encroachment to Millar Western's Forest Management Agreement area, we will identify the factors above that are the "least certain" factors. We will identify a range of plausible future outcomes for each of the "least certain" factors and will assess the potential range of impacts of each on land use in the study area.

At this juncture, we have identified the following as the "least certain" factors:

- Climate change and its potential impact on both the demand for and supply of land in the study area.
- Socio-political shifts worldwide and the potential impacts on country-by-country trade as well as migration flows and therefore on the potential population of Canada, Alberta, and the study area.
- Technological change and its impact on land use in general and on land use in the study area in particular.
- Economic shifts world-wide and the potential impacts on relative living standards in general and on the potential for tourism growth in the study area in particular.

Based on the above, we will identify any plausible threats to Millar Western's Forest Management Agreement area that might emerge over the next two centuries.

For more information on this work please contact Richard Loreto from RAL Consulting by email at ralconsulting@cogeco.ca or by calling 1-877-573-2777, or; Tom McCormack from The Center for Spatial Economics by email at tmccormack@c4se.com or by calling 1-888-774-9009.

Dirt Work! **A Summer Job with the FORWARD Project**

Roshan Gervais encountered six bears at work this summer. Fortunately all the encounters ended inconsequentially. Either the bear or Roshan made a quiet yet rapid exit. It was just enough excitement to make for good story telling, but not too much to keep Roshan from considering the same job next summer.

Roshan is an undergraduate student in the Environmental and Conservation Science program at the University of Alberta. He worked from May through August of 2004 as a Soils Research Assistant for the FORWARD project.

The FORWARD water research project was featured in two previous DFMP Newsletters - see March 2004 'Background on Impact Assessment Groups: The FORWARD Project' and September 2004 'Modeling Watershed Disturbance in the Forest Environment: FORWARD 2004 Workshop'.

Working 10-day shifts, Roshan and his colleagues made their home in an old camping trailer at a fire fighter training camp in Millar Western's forest management area. Working with his field partner Stephanie, a Hydrology Research Assistant for the FORWARD project, they used ATV's to access sampling sites in the FORWARD study area. Over the course of the summer Roshan took thousands of soil measurements to establish baseline information on soil health for the

FORWARD project. At 68 different sampling sites he took repeated measurements of soil moisture content and temperature; he also sampled soil bulk density at a subset of these sites. Stephanie took water measurements at the same sites.

Over the summer as they became well practiced, it would take them only two days to cycle through the 68 sites and start again. Wet weather made this cycle take a few days longer because they



Looking surprisingly clean, Roshan arrives at a sample site in one of the FORWARD watersheds that was burned by wildfire in 1998.

would have to wait for breaks in the rain to take some of the soil measurements.

Roshan measured soil moisture content with a Delta T Probe. At each sample site a long "access tube" was inserted and left in the ground. The tube is a hollow cylindrical stick, completely enclosed so that no soil or moisture can enter into it, with a cap on the top where it sticks out of the ground. For each measurement Roshan would pop the cap off and insert a long probe. The probe uses electro-magnetic waves to read the moisture in the soil surrounding the access tube.

Measuring soil temperature was fairly simple however, the device used to take the measurements was particularly sensitive. It would frequently have to be brought back to camp where the loose wires could be laid out on the dinner table and fixed.



Taking soil temperature measurements.

Bulk density has to be measured in a laboratory, and Roshan used an auger-like tool to take soil samples to bring back to the lab. He took samples at 10 cm increments down to 40 cm deep at two locations in site sampled, for a total of eight samples per site.



Stephanie, the Hydrology Research Assistant, and Roshan, the Soils Research Assistant, worked as a team for the FORWARD project taking repeated soil and water measurements at 68 sample sites in Millar Western's forest management

Bulk density sampling was the most time consuming of the soils work. Roshan would push the auger into the ground and pull it out again. Then he would unscrew a core at the tip of the auger, and from that pop out a small sleeve that contained the soil sample. Without losing any of the soil (because inconsistent soil volumes will interfere with the bulk density measurement at the lab), it had to be very carefully transferred into a small plastic bottle.

Removing the soil from the sleeve could be very tedious, particularly on upland sites with sticky, heavy clay. Repeated sampling on these types of sites made for sore thumbs and fingers, so much so that it was difficult to hold utensils at dinner on those nights.

The above three measurements were taken from a variety of sites at both disturbed and undisturbed watersheds: ones that have been harvested, ones that burned in a 1998 wildfire, and ones with no fire or harvesting (control sites). The soil measurements are one component of the larger FORWARD project. The project models ecological processes that link forest disturbance to the quality and quantity of water within watersheds in Millar Western's forest management area.

A summer in working in the bush doesn't come without its fair share of wildlife and insects. Early in the summer the insects weren't so bad because in May and June the nights were pretty cool. Some mornings the field crew would head out in sub-zero temperatures dressed in all the clothing they'd brought. But on

some days by the time they drove to their first sample site and unloaded their ATV's it was approaching 25 degrees, and they would strip down to shirtsleeves. By July the nights had warmed up enough that the mosquitoes came out in full force. Over quiet evening meals inside their bug-proof trailer they could hear the loud, steady hum of the mosquitoes outside. This became a common backdrop for their evening card games, and a reliable back-up section for Roshan's guitar.



Roshan saw six bears over the summer: five black bears and one big, blond grizzly bear. There is a considerable amount of comfort with being on a fast-moving ATV when you encounter a bear. However, one time Roshan encountered one on foot. One of the sample sites they had to visit was in the middle of a wetlands area. Roshan and Stephen would typically park their ATV's and head in on foot.

However, one time Roshan reached the wetlands ahead of Stephanie, and he parked his quad began walking in before she caught up. As he approached the sample site he'd visited so many times before, he saw a tree stump he'd never before noticed. A black one that looked like it had been burnt. It wasn't until he was 10 feet away that Roshan realized it was a black bear. Too close for comfort, he radioed Stephanie and quickly explained his situation. Her reply sounded pretty

reasonable to him: "Hurry up! Get away!"

But it was a fun summer job. Roshan hasn't decided what he'll do next summer for work but four more months with the FORWARD project is definitely an enjoyable prospect. Long days outdoors, camaraderie and good meals, all in the name of research that directly relates to his undergraduate degree work and the pursuit of sustainable resource management.



SECTION II: MILLAR WESTERN

Field Sampling Update

Here is an update on progress for Millar Western's 2004 field sampling program.

Permanent Sample Plots - The 2004 sampling is complete.

Temporary Sample Plots - These are expected to be finished in November 2004.

BAP Sampling - About 80% of the sampling for the Biodiversity Assessment Project (BAP) is complete; the remaining BAP plots will be sampled in spring 2005.

Virginia Hills - The Virginia Hills cruising program was nearing completion when it snowed; the program will be continued in spring 2005. Around 4000 of approximately 6200 hectares have been completed to date.



Pine regrowth in the burned Virginia Hills area.

Data from the Permanent and Temporary Sample Plots will be used to update the yield curves for the DFMP. The yield curves will be submitted to the provincial government for review and approval in May 2005. Protocols are currently being developed to sample the Athabasca Flats area that was logged using horses.

Annual and 5-Year Forest Management Reporting

The Steering Committee the considering templates and processes for developing Annual Performance Reports and 5-year Stewardship Reports.

Annual Reports will be submitted to the government in May of each year. They will report on activities for the timber year (May 1 to April 30) one year prior to report submission; the one-year time lag allows for the processing of field data used in the report. Stewardship Reports will be submitted in May every five years. As with the Annual Reports, there is a time lag between the reporting period and the date of submission. The last Stewardship Report covered the reporting period May 1, 1997

to April 30, 2002 and was submitted in 2003. In order to bring the 5-year submissions in line with DFMP submissions, which are every ten years, the next Stewardship Report will cover the period from May 1, 2002 to April 30 2004, and will be submitted as a component of the DFMP in 2006. Subsequent Stewardship Reports will again follow the 5-year format, and will be submitted either midway through DFMP planning periods or as a component of a DFMP.

Templates for both reports are being developed by the Steering Committee in order to clarify data needs and reporting requirements. The draft templates are being reviewed by the Steering Committee, Millar Western staff, and members of the provincial government. These templates should improve the speed and consistency of Millar Western's reporting process.



Bob Mason and Dave Wall from Millar Western are pleased with the vigorous growth in these regenerating spruce trees.

SECTION III: PLAN DEVELOPMENT TEAM

Inaugural Meeting of the Timber Supply Committee

The Timber Supply Analysis Impact Assessment Group (the "TSA IAG"!) had their first formal meeting on October 25 in Edmonton. The purpose of meeting was to:

1. Bring all members up to speed on the Detailed Forest Management Plan process;
2. Review the group's roles and responsibilities in the development of the management plan;
3. Discuss integration with the other groups on the planning team; and,
4. Decide on the group's next steps in the TSA process.

The meeting was successful in getting the ball rolling on components of the timber supply process that had already begun but required detailed direction and input from the TSA group as a whole. Key outcomes from the meeting include:

- Process initiated to review the strategic direction of the management plan (the draft

- VOITs - Values, Objectives, Indicators and Targets);
- Clarification that the spatial harvest sequence will address only 100% of operators' volumes for 10 years;
- Preliminary spatial sequencing will be reviewed in November by Millar Western and embedded operators; and,



Millar Western's planning process takes into consideration both timber and non-timber values.

- Developing, assessing and selecting a preferred strategy for forest management;
- Designing monitoring programs, evaluating their results, and recommending improvements; and,
- Discussing and resolving any issues relevant to sustainable forest management in the Whitecourt forest area.

Public Participation Group for DFMP

The forest landbase where Millar Western and other forest operators conduct their management activities is a public resource and is owned by the Crown. Forest companies such as Millar Western have rights to grow and harvest trees there, but must do so with careful consideration to other, non-timber forest values. For example, soil and water resources, wildlife, cultural and heritage resources, hunting and trapping, and recreation. Given that the public owns this resource, forest companies must provide the public with opportunities to participate in the development of their forest management plans, as these plans will ultimately have an impact on non-timber resources.

The Communications Committee for the DFMP (see issue 5, 'Communications Committee News') has convened a Public Participation Group to assist with the development of their forest management plan. The group is comprised of 10 public members that represent a cross-section of

interests in the Fort Assiniboine, Swan Hills and Whitecourt area. They have been meeting on almost a monthly basis since September of this year to review Millar Western's strategies for forest management.

The extent of their participation beyond the development, review and public-approval of a set of Values, Objectives, Indicators and Targets for forest management will be decided by the group. Additional participation, may include:



Deb Edney (logging contractor), Ray Hilts (Millar Western) and Jerry Bauer (facilitator) get into a detailed discussion on Millar Western's management strategies at a Public Participation Group meeting in Whitecourt.

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

DFMP Workshop

As a reminder, the DFMP Workshop is being held in Edmonton on December 7th and 8th. At the workshop the plan participants will review the structure of the DFMP and the project status for each planning group, and have detailed discussions on timelines, data needs and integration among the groups. A workshop agenda will be distributed in November. Attendees requiring additional information about the workshop are asked to contact Gunnilla Nilsson.


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DFMP *Newsletter*

NUMBER 7, January 2005

In This Issue

To kick off the New Year, page 7 has an update on the status of every group on the Plan Development Team. This update was aided by the successful Detailed Forest Management Plan (DMFP) Workshop in December - see page 5 for a summary and pictures. The turnout at the Public Open House in November didn't draw nearly as large a crowd, but those who attended asked thoughtful and engaging questions - see front page. This issue also features an article on the FireSmart Impact Assessment Group - see page 2 to learn more.



Enjoying the open house, from left to right: Karen Manweiler (public); Jonathan Russell, Trevor Wakelin, Doug Scatcherd (Millar Western); and Brian Wallach (SRD).

SECTION I: PUBLIC

November 24 DFMP Public Open House

The first open house for the 2006 DFMP, held on November 24th at the Whitecourt Travelodge, drew a small but interested crowd. A brochure was mailed to 7000 residences in the region; it invited members of the public to attend the open house and delivered key facts on Millar Western's operations.

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At the open house, Millar Western staff answered questions from the public and engaged in discussion regarding the DFMP and provincial forest management issues. Visitors took home detailed maps showing roads, seismic activity and traplines within Millar Western's forest management area. Posters and videos presented information on the DFMP and provincial forest planning processes.

Millar Western will host another open house in the spring of 2006 to present the final DFMP to the public.

Background on Planning Groups: FireSmart

Smart Strategies for Managing Wildfire

Forest fires are an ecological component of the boreal forest. They are nature's primary mechanism to renew old forests by burning them, thereby providing nutrient and light conditions required for the establishment of new forests.

Years of wildfire suppression have changed the natural cycle of fire in the boreal forest. By suppressing fire, fuel is allowed to build up beyond historical levels. The resulting larger, higher-intensity, higher-severity fires present an increasing threat to rural communities and natural resources.



Under natural conditions, fuel-loading is kept in check by smaller, more frequent fires. However, years of fire suppression have allowed fuel to build up and resulted in fewer fires of higher severity.

This conflict between the ecological need for wildfire, and the need to protect communities and resources, has led to the development of FireSmart. Millar Western led the development of FireSmart during the development of their previous DFMP (1997-2006).

FireSmart is a strategy for managing forests to mitigate the occurrence and effects of large, high-intensity, high-severity wildfires, while still maintaining natural ecological processes. The purpose is to protect human life, communities, watersheds and soils, natural resources, and infrastructure.

An example of a FireSmart strategy at a local or community scale might be to replace coniferous trees with more fire-resistant deciduous species around the perimeter of a rural community. At a forest- or landscape-level, thinning dense, coniferous forests

could reduce fuel loading, thereby reducing the risk of large-scale wildfires.



A strategically located road can help provide a fire break.

In their previous DFMP (1997), Millar Western developed a long-term road into the east side of the "West Windfall" planning area to facilitate fire fighting activities. The road serves several purposes for wildfire management:

- Rapid provides quick access for deployment of fire fighting crews and equipment.

- Road reduces costs and time to ferry fire fighting crews.
- Road can be used as a staging area for larger fires.
- The 100-metre wide right-of-way can be a strong anchor point for fire fighting activities.
- 70 metres of the right-of-way are planted to poplar, introducing some fire retardant species to the area and reinforcing the linear fuel break.

FireSmart landscapes should incorporate an understanding of the natural fire environment; this is done through a “fire regime analysis”. They should also incorporate an understanding of the risks associated with wildfire; this is achieved with a “wildfire threat assessment”.

Before it was required by the government, Millar Western determined the fire regime for the area around Whitecourt. They also conducted assessments of wildfire impacts and considered landscape-level strategies for mitigating the effects of wildfire in their last DFMP (1997-2006). Since then, provincial forest planning standards have been revised and now require forest products companies to develop FireSmart strategies.

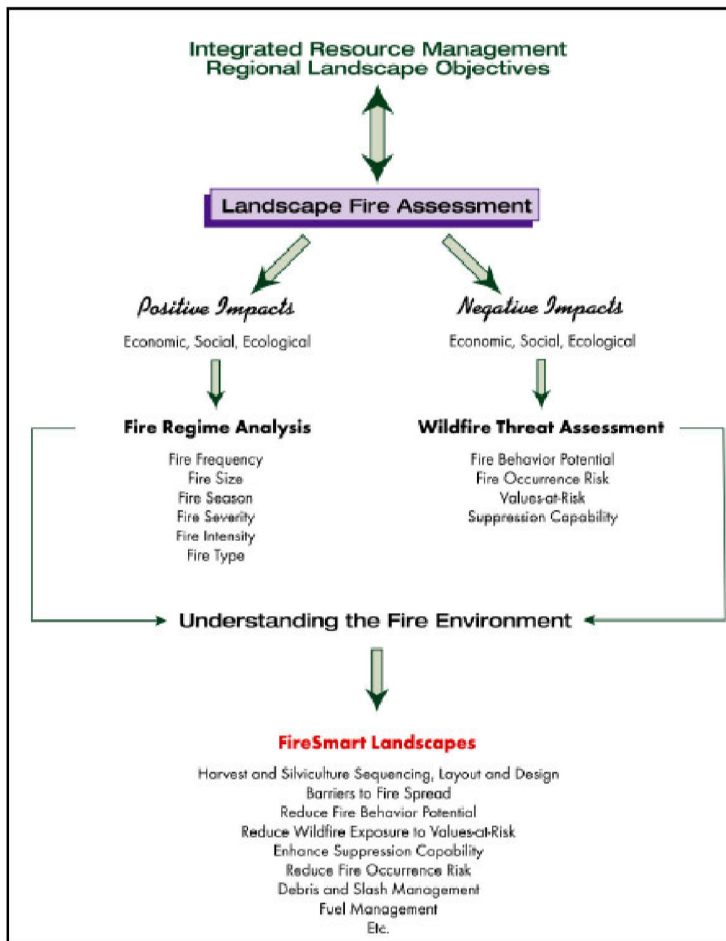
The FireSmart Impact Assessment Group is responsible for conducting a landscape fire assessment in Millar Western’s forest management area. The group includes people from Millar Western, the Town of Whitecourt, the research community, and the provincial government.

The FireSmart group will use the fire regime analysis from the 1997 DFMP. Through an iterative process, the group will then evaluate the forest management scenarios that Millar Western is considering for the DFMP, for their impacts on fire potential and behaviour.

Information learned from these analyses will be used to develop

FireSmart management strategies, which will ultimately be incorporated into the preferred forest management scenario proposed in the DFMP.

Since wildfire does not recognize administrative forest boundaries, Millar Western and neighboring forest companies Blue Ridge Lumber, Slave Lake Pulp, and Alberta Newsprint



Landscape Fire Assessment Flowchart. Source: Sustainable Resource Development. 2004. Wildfire Threat Assessment Model User Guide. March 2004 Version 3.0.

Company, have decided to work co-operatively to develop a regional approach to FireSmart. This will result in more comprehensive FireSmart strategies and hopefully lead to more successful mitigation efforts.

For more information on Millar Western's approach to FireSmart, please contact Ray Hilts at Millar Western: (780) 778-2221.

SECTION II: MILLAR WESTERN

Growth and Yield Update

Yield Stratification

The strata definitions being proposed for W11 and W13 Forest Management Units are shown in the tables below. They are based upon species strata and broad cover group (assigned using government rule set), and crown closure class and timber productivity rating (TPR) (obtained using Alberta Vegetation Inventory).

All strata roll into the four broad cover groups; Conifer (C), Coniferous-leading mixedwood (CD), Deciduous-leading mixedwood (DC), and Deciduous (D).

These strata form the basis for the yield curves to be used in the timber supply. Each stratum will have one or more yield curves for

both managed and natural stands. Special strata (Virginia Hills Burn, Windfall Burn, Athabasca Flats, and commercially thinned stands) may have separate yield curves developed to describe their standing yield.

Yield Curve Status

Data from the 2003 and 2004 permanent sample plot programs are currently being loaded. Yield curve development will begin once this is complete and will incorporate both temporary and permanent sample plot data. Final yield curves will be submitted to the government for approval in May 2005.

Growth and Yield Program

The Growth and Yield Program will describe past and current

growth and yield sampling programs, identify the philosophy and goals of future growth and yield sampling (including intended data uses), and outline a sampling program to address those needs.

Initiatives that will be addressed by the Growth and Yield Program include permanent and temporary sample plots, aerial reinventories, and other potential research initiatives. Data will be used to describe the current and future forest states under various management scenarios.

The program is lead by Tim McCreedy at Millar Western, and will be submitted to the government for approval in June 2005.

FMU W11 Yield Strata					
Yield Stratum	Yield Code	Broad Cover Group	Species Strata	Crown Closure Class	TPR
Aspen open	AW_AB	D	AW	AB	FMG
Aspen closed	AW_CD	D	AW	CD	FMG
Deciduous leading mixedwood	APAS_ABCD	DC	AP, AS	ABCD	FMG
Coniferous leading mixedwood	PASA_ABCD	CD	PA, SA	ABCD	FMG
Pine open	PL_AB	C	PL	AB	FMG
Pine closed	PL_CD	C	PL	CD	FMG
White spruce open	SW_AB	C	SW	AB	FMG
White spruce closed	SW_CD	C	SW	CD	FMG

FMU W13 Yield Strata					
Yield Stratum	Yield Code	Broad Cover Group	Species Stratum	Crown Closure Class	TPR
Aspen	AW	D	AW	ABCD	FM
Deciduous leading pine mixedwood	AP	DC	AP	ABCD	FM
Deciduous leading spruce mixedwood	AS	DC	AS	ABCD	FM
Coniferous leading pine mixedwood	PA	CD	PA	ABCD	FM
Coniferous leading spruce mixedwood	SA	CD	SA	ABCD	FM
Black spruce	SB	C	SB	ABCD	FM
Pine	PL	C	PL	ABCD	FM
White spruce	SW	C	SW	ABCD	FM

Proposed yield strata for Forest Management Units W11 and W13.

Status of Timber Supply Analysis

Landbase

An initial version of the netdown landbase is currently available for preliminary timber supply scenarios. The Plan Development Team and Millar Western staff are in the process of evaluating the landbase datasets for comprehensiveness and are doing fine tuning adjustments. A final version will be submitted to the government for approval in May 2005.

Timber Supply

Preliminary analyses of timber supply (TSA) began in late fall 2004 to conduct initial spatial sequencing with input from Millar Western and the embedded operators. These runs use the preliminary net landbase and yield curves from the previous DFMP (sufficient for this purpose).

Several management scenarios identified at the DFMP workshop will be modeled and analyzed. These are in addition to exploratory scenarios, such as no harvesting, unconstrained AAC (Annual Allowable Cut), and status quo (preferred scenario from last DFMP). When the yield curves and landbase are complete they will be incorporated into the timber supply model. These scenarios will continue through to the summer with IAG input. The final Preferred Forest Management TSA runs will be conducted in September 2005.

SECTION III: PLAN DEVELOPMENT TEAM

Productive 2 Days at the DFMP Workshop

Thank you to all who participated in the December DFMP workshop in Edmonton. Fifty people attended including representation from:

- the DMFP Plan Development Team;

- Millar Western;
- the Alexis Nakota Sioux Nation;
- Weyerhaeuser Company Ltd.;
- Blue Ridge Lumber;
- Slave Lake Pulp;
- Sustainable Resource Development, and;
- the Canadian Forest Service.

Much was accomplished at this first gathering of the rather large planning team, which includes 14 groups and committees. A mixture of presentations, breakout sessions and group discussions resulted in the following products:

- Increased understanding of how each Impact Assessment and Landscape Projection



Several workshop participants engage in discussions. Foreground (L to R): Ivan Whitson, soils researcher for the FORWARD project; Don Thompson, Millar Western GIS Coordinator; Ray Hiltz, Millar Western Forest Planner on the Steering Committee. Background (L to R): Vic Adamowicz, University of Alberta researcher on the Oil and Gas Landscape Projection Group; (back of) Frédéric Doyon, IQAFF researcher for the Biodiversity Assessment Project; Stephen Wills, Sustainable Resource Development Planning Forester on the Steering Committee; Hugh Wollis, Sustainable Resource Development Wildlife Biologist on the Steering Committee; (back of) Robin Duchesneau, IQAFF vegetation researcher on the Climate Change Landscape Projection Group.

- Group fits within the DFMP framework.
- Identification of each group's information and data needs.
 - Identification of linkages among groups to obtain information and data.
 - Detailed work schedules.
 - List of management scenarios for the Timber Supply Analysis Impact Assessment Group to develop; these will be considered generally or assessed in detail by the water, biodiversity, fire and carbon Impact Assessment Groups.

The timelines and commitments identified in workshop are posted on the FTP site for the DFMP, along with the PowerPoint presentations and a summary of the workshop.



Left to right facing: Richard Loreto from the Human Population Landscape Projection Group and Ivan Whitson from the FORWARD group think seriously about the DFMP; Ellie Prepas cheerfully discusses with Gordon Putz how the soil and water modelling will be integrated with forest management. In the foreground, Paul Scott, Weyerhaeuser representative on the Timber Supply Analysis Impact Assessment Group, ponders the “linkages” table drawn by Peter Duinker.



Ted Gooding explains timber supply to a sold out audience at the DFMP Workshop.

Plan Development Team Update

We are a year and five months from the submission date for the DFMP (May 15, 2006). To see where we stand in the development of the plan, here is a brief update on the status of the committees, Impact Assessment Groups (IAGs) and Landscape Projection Groups (LPGs), in a nutshell:

Steering Committee

- Currently coordinating IAG review of publicly-approved Values, Objectives, Indicators and Targets (VOITs).



Bob Mason takes the stage at the November 17 Steering Committee meeting. From left to right: Stephen Wills, Gunnilla Nilsson, Shelley MacLean, Bob Mason and Brian Wallach.

- Terms of Reference currently being prepared for final submission in Jan'05.
- Development of Operating Ground Rules to begin in Feb'05.
- Development of Standard Operating Procedures to begin in June '05.
- Select Preferred Forest Management strategy in Sep'05.
- DFMP assembly to begin in Dec'05.
- Submit draft DFMP in Jan'06, final DFMP in May'06.

Communications Committee

- Communication Plan submitted to government in Dec'04.
- Completed initial public review of VOITs with Public Participation Group (PPG).
- Ongoing involvement with PPG to review overall planning process.
- Final VOITs review with PPG in early summer '05.

Environmental Co-Stewardship Committee

- Meetings with the Environmental Co-Stewardship Committee will commence early this year.

Timber Supply Analysis IAG

- Preliminary model running.
- Operational analyses begin Feb'05.
- Input data sets complete by Apr'05.
- Submit landbase netdown May '05.
- Submit yield curves May '05.
- Management assumptions Aug'05.
- Finalize spatial harvest sequence by end of Aug'05.
- **Preferred Forest Management strategy run in Sep'05; this is the latest opportunity to provide input to the timber supply.**

Biodiversity IAG

- Four Habitat Supply Models have been field-verified (lynx, least flycatcher, varied thrush and goshawk).
- Special Habitat Element models are being updated with 2004 field data.
- Field data collection program is complete.

- Assessments on Round 1 TSA scenarios begin in spring '05.



Source: <http://www.esdm.qc.ca/stejare/dictionnaire/images/dic/lynx.jpg>.

FORWARD IAG

- Soils map of entire FMA complete by June '05.
- Currently finalizing soil and water modelling procedures, and integration techniques with output from the TSA models.
- Assessments on Round 1 TSA scenarios begin in spring '05.

FireSmart IAG

- Current-year wildfire threat assessment complete.
- Finalizing details regarding fire behaviour prediction codes and resolution of assessments.
- Initiating co-operative, regional FireSmart process with neighboring forest companies.
- Assessments on Round 1 TSA scenarios future forest scenarios to begin in spring '05.

Carbon IAG

- Carbon model selected (CBM-CFS2).
- Model requires parameterization - growth and yield; disturbance; reforestation; ecosystem classification; soil surveys; climatic data.

- Carbon assessments on Round 1 TSA scenarios to begin in spring '05.

Climate Change LPG

- Currently finalizing selection of climate change scenario in co-operation with the Population LPG.
- Statistical downscaling of selected scenario in late winter '05.
- Climate and vegetation change predictions expected in spring '05.



Approximately 20% of Millar Western's forest management area consists of mixedwood stands, like this aspen and white spruce stand.

Population LPG

- Draft report on base case human population scenario by Feb'05.
- Final results on additional population change scenarios forthcoming in late spring '05.

Wildfire LPG

- Currently incorporating data for wildfire modelling from neighboring companies' forest management areas.
- Wildfire modelling process complete in spring '05.

Oil and Gas LPG

- Data collection and model development currently underway.



Millar Western's log yard and crane.

- Projections of linear disturbance on landscape over next 200 years complete by June '05.

Landscape Dynamics Modelling LPG

- SELES landscape submodels are currently being developed.
- Test SELES landscape model by June '05.
- Run landscape simulations summer '05.

Peer Review Committee

- Currently finalizing selection of peer reviewers.
- Workplans reviews to begin in Feb'05.
- Review of draft IAG and LPG results from Feb'05 to Sep'05.
- Review of final results and DFMP from May '05 to Jan'06.

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

On the FTP Site...

- Updated PERT Chart (DFMP timelines and linkages)
- Meeting minutes up-to-date
- Presentations, summary and commitments from DFMP workshop in December 2005
- Updated Plan Development Team contact information
- Communication Plan
- VOITs
- Final Terms of Reference

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