

Northern Silviculture Committee summer field tour

New directions in forest management

Alan Wiensczyk

“Getting the most value from the resource as possible is one of the primary objectives of Vanderhoof Specialty Wood Products,” said company representative **Paul Heit**. This statement at the first stop on the Northern Silviculture Committee’s 2010 summer field tour set the tone for remainder of the day. The theme of the tour—*New Directions in Forest Management*—focussed on the idea that we need to develop a fibre-based operational model to take full advantage of the increasing demand for various types of fibre along with the traditional sawlog. The tour, which took place on June 15th in the Vanderhoof area, attracted over 70 participants from industry, government, academia, the consulting field, and non-government organizations. On the tour through the Vanderhoof Speciality Woods complex, participants learned that this company, which was formed in 1990, initially provided Japanese housing components and is now a value-added operation, taking waste material from the Canfor Plateau Mill and producing finger-joint lumber and pellets (see below). The company also works directly with loggers and processor operators in obtaining suitable tree tops, primarily from mountain pine beetle-killed lodgepole pine, to produce posts and rails, which are

then marketed in British Columbia, Alberta, and the United States. Pellets are marketed locally (northern British Columbia) and the finger-joint lumber is marketed in British Columbia and Alberta. Less than 2% of the waste received from other operators for use in Vanderhoof Specialty Woods’ products ends up in the landfill and the company is working diligently to reduce this amount.

After the mill tour, the group headed out to the field sites. At the first site, **David Weaver** (B.C. Ministry of Forests, Mines and Lands) provided information on the recent changes to the free-growing stocking standards. He informed participants that the single-tree selection stocking standards are now recommended for use only within the biogeoclimatic zone for which they were developed (Interior Douglas-fir zone), or for small-scale, area-based tenures such as woodlots. Changes to the maximum density per stratum for lodgepole pine-leading stands (> 80%) vary by region (e.g., Northern Interior Forest Region: 20 000 countable conifers per hectare; Southern Interior Forest Region: 25 000 countable conifers per hectare). The maximum density remains at 10 000 countable conifers per hectare for all other species in both regions.

In some forest districts, modifications are also proposed for the minimum intertree distance rule of 2 m. Surveyors should consult with the relevant district office to find out whether any approved changes apply where they operate and what those changes are. Finally, Weaver informed participants that the number of trembling aspen stems allowed has increased as a result of silviculture research on dry sites in the Sub-boreal Pine-Spruce zone of the Cariboo-Chilcotin plateau; however, lodgepole pine/aspen height ratio requirements exist. For more details, refer to the *Silviculture Surveys Procedures Manual* (see: http://www.for.gov.bc.ca/hfp/silviculture/Surveys/SilvicultureSurveyProceduresManual_April_1_2010.pdf).

A monitoring program for forest plantations is critical to ensure that previously declared free-growing stands continue to develop along the assumed path



Raw material used in the production of products at Vanderhoof Specialty Wood Products Ltd.

of stand growth and health and to meet Timber Supply Analysis expectations. So said **Alex Woods** (B.C. Ministry of Natural Resource Operations), who provided tour participants with details of how the Forest and Range Evaluation Program Stand Development Monitoring (FREP SDM) fills this need (see adjacent). Because the SDM protocol is similar to standard free-growing surveys, the data it produces is comparable to those earlier assessments. It also collects sufficient data to allow for a check on TIPSY (Tree Interpolation Program for Stand Yield) yield projections and so provides a look forward as well. Woods added that during SDM assessments an emphasis is placed on capturing accurate forest health data. District FREP crews collect data from the same strata as that delineated in the free-growing survey so direct comparisons can be made between the two points in time. Following this procedure allows for both an estimate of stand growth trajectory and an estimate of the influence that forest health agents has on those projections. Stand Development Monitoring captures a yield estimate of all trees with a diameter breast height of 7.5 cm or greater for both healthy and pest-infested trees, which enables the comparison with TIPSY growth projections. See sidebar for additional information on the SDM program and some initial assessment results.



Alex Woods discusses the FREP Stand Development Monitoring protocol with tour participants.

FREP Stand Development Monitoring Information

Woods, A. 2010. Stand Development Monitoring (SDM): What have we learned so far, and how can this help us adapt to a changing climate? Presentation on March 18, 2010, in the FORREX Online Webinar Series: What's new in Forest Productivity Research. FORREX Forum for Research and Extension in Natural Resources, Kamloops, B.C. http://www.forrex.org/program/forest/ESM/PDF/Webinars/Forest_Productivity_Research/PPTs/Woods_18Mar10.pdf

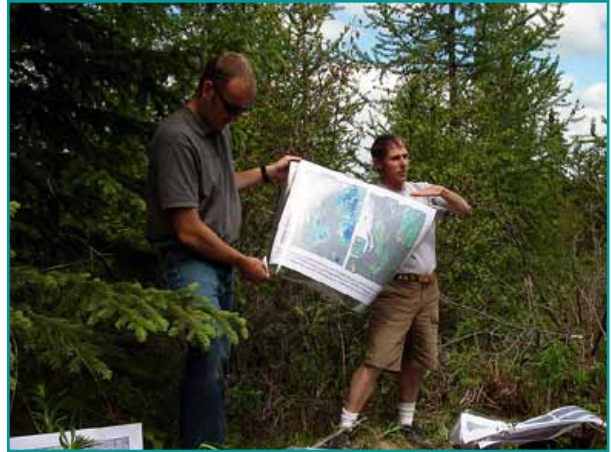
Woods, A. 2010. Forest and Range Evaluation Program Stand Development Monitoring (SDM). B.C. Ministry of Forests and Range, Forest and Range Evaluation Program, Victoria, B.C. FREP Extension Note No. 10. http://www.for.gov.bc.ca/ftp/HFP/external!/publish/FREP/extension/FREP_Extension_Note10.pdf

Woods, A. and W. Bergerud. 2008. Are free-growing stands meeting timber productivity expectations in the Lakes Timber Supply Area? B.C. Ministry of Forests and Range, Forest and Range Evaluation Program, Victoria, B.C. FREP Report No. 13. http://www.for.gov.bc.ca/ftp/hfp/external!/publish/frep/reports/FREP_Report_13.pdf

The next stop featured a 28-year-old western larch planting trial. Here, **Greg O'Neill** and **Matt LeRoy** (B.C. Ministry of Forests, Mines and Lands) discussed the assisted migration work being done with western larch. Using over 185 000 data points that indicate the presence or absence of western larch throughout south-central British Columbia and the western United States, **Dr. Gerald Rehfeldt** (retired, U.S. Department of Agriculture Forest Service) and **Barry Jaquish** (Tree Improvement Branch, B.C. Ministry of Forests, Mines and Lands) have created equations that can be used to identify current western larch habitat and to predict geographic areas where future climates are likely to match western larch's climatic requirements. Western larch models of genetic variation were combined with these bioclimate models to predict new climate-based seed zones for western larch and to identify populations where gene conservation programs will be needed. LeRoy presented maps of the new climate-based seed zones showing where western larch could be planted and where the seed for those trees should be gathered

(see adjacent). These maps are available on the Tree Improvement Branch website (http://www.for.gov.bc.ca/hti/climate_based_seed_transfer/index.htm) and are based on a projected climate for 2030, which is the middle of the next rotation. LeRoy noted that choosing seeds to match the predicted climate at this stage will allow seedlings to survive now and also at rotation. He explained that if we plant seedlings that match the predicted conditions at rotation, it is unlikely that they would survive current climatic conditions. Erring towards the seedling establishment phase is preferable as seedlings are more susceptible to the environment and less likely to tolerate environmental changes than are older trees. He also added that, until better information is available, a conservative approach is required when planting larch outside of its current range. Larch deployment should be limited to 10% (or, up to 5000 larch seedlings for small operators) of the combined total number of seedlings planted by the agreement holder each year. See the amendment to standards (June 2010) for more details (<http://www.for.gov.bc.ca/code/cfstandards/amendmentJun10.htm>).

The final two stops of the summer tour dealt with a forest health issue and agroforestry. **Richard Reich** (B.C. Ministry of Natural Resource Operations) updated participants on current research into the genetic resistance of lodgepole pine to comandra blister rust and on the relationships between this pathogen and its alternate host, bastard toad flax. **George Powell** (Innovative Natural Resource Management Solutions) provided examples of northern agroforestry opportunities. Agroforestry is the blending of agriculture and forestry to derive multiple benefits from the same piece of land. Powell stated that properly structured and managed combinations of trees, shrubs, and ground crops can produce more value from each land unit because these complementary plant mixtures make better use of the land's growth potential. He added that agroforestry can provide economic (e.g., continuous



Matt LeRoy (left) and Greg O'Neil explain the development of the climate-based seed zone maps for western larch.

revenue), social (e.g., First Nations cultural values), and ecological (e.g., nutrient cycling) benefits. One common example of agroforestry in British Columbia is “silvopasture,” a techniques where livestock (cattle and sheep) are used for site preparation and vegetation management in conifer plantations. The following two websites provide more information on agroforestry opportunities in British Columbia.

B.C. Ministry of Agriculture – Agroforestry:
<http://www.agf.gov.bc.ca/resmgmt/agroforestry/>

Farmwest – Interview with George Powell:
<http://www.farmwest.com/index.cfm?method=pages.showPage&pageid=269>

Contact Information

Alan Wiensczyk is a FORREX Ecosystems and Stand Management Extension Specialist, based at 400–1488 Fourth Avenue, Prince George, BC V2L 4Y2.
Email: Alan.Wiensczyk@forrex.org

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