



Silviculture operations in the Cascades

by Kathie Swift, Early Stand Dynamics Extension Specialist and Todd Redding, Watershed Management Extension Specialist

Under the blazing September sun and sitting among the large cutblock openings created from salvaging the effects of the mountain pine beetle (MPB), participants attending the 2007 Summer Southern Interior Silviculture Committee's (SISCO) Field Tour in Merritt saw first-hand many of the silvicultural challenges occurring in the Cascades Forest District.

As the MPB invades yet another forest district, the human response to managing forests has again had to adjust to accommodate this latest challenge. The MPB continues to redefine our provincial planning assumptions and test our silvicultural tool kit to manage the effects. According to **Rod Deboice**, the Provincial Bark Beetle Co-ordinator ("Beetle Boss"), one of the tools that is currently being implemented, and is the subject of much debate, is a large cutblock strategy. This strategy uses a combination of large cutblocks to break up the contiguous lodgepole pine forests and well-planned and strategically placed areas of retention to manage and protect important elements, such as biodiversity and wildlife habitat. According to the "Beetle Boss," provincially we are now managing three times more lodgepole pine on the land base than we were in 1916, which has created a larger food source for the beetle than previously available. In the future, part of our planning may include creating fewer large areas of even-aged

lodgepole pine stands and managing those that we do have on a shorter rotation. We will also have to determine the role fire will play in our existing and future strategies.

In the Cascades Forest District, this large cutblock strategy has had significant positive and negative effects on the ranching community. **Judith Guichon**, owner/operator of Gerard Guichon Ranch Limited, said that removing large forested areas has certainly increased short-term grazing opportunities, but she wonders what will happen in the next few years once these large openings regenerate and start to achieve crown closure. Creating large openings has also meant losing many of the natural barriers that ranchers once used to control herd movements. This means artificial barriers will be needed and/or specific corridors created to take advantage of existing fences. Large openings have also increased the amount of roads, which, in turn, has meant more access from cattle (hard to keep cattle isolated to specific pastures) and other users, such as drivers of All-Terrain Vehicles and recreationalists. Increased disturbance and access has also resulted in an invasion by non-native plant species.

One benefit of the large cutblock strategy has been the economic opportunities created for First Nations participation in forestry. **Chief David Walkem** and members of the Stuwix Resources Joint Venture, a forestry company that manages a 515,000 m³/year forest licence for eight stakeholder Indian Bands, told SISCO participants how they have managed to develop a system of referrals and consultation to address First Nations concerns and how this work has created opportunities for improved co-operation in this forest district. Part of the success for this co-operation could be linked to the Nicola Similkameen Innovative Forestry Society (NSIFS). NSIFS is a non-profit society that grew out of the Innovative Practices Agreement that was given to the Merritt Timber Supply Area in the late 1990s. The current Chair and co-Chair of the NSIFS Board are **Jerry Canuel** from Aspen Planers and Chief Walkem from Stuwix. Representatives from Tolko, BC Timber Sales, Weyerhaeuser, Upper Similkameen Indian Band, and the Nicola Tribal Association make up the current list of director affiliates. For more information on the NSIFS, please visit their web site at <http://www.nsifs.bc.ca>

What effect do these large openings have on the hydrologic cycle? **Dr. Rita Winkler** from the BC Ministry of Forests and Range (MOFR), Southern Interior Forest Region, Research Section, offered

Tour participants discuss biodiversity and wildlife issues in large openings created by the mountain pine beetle harvest salvage in the Cascades Forest District.



Todd Redding photo

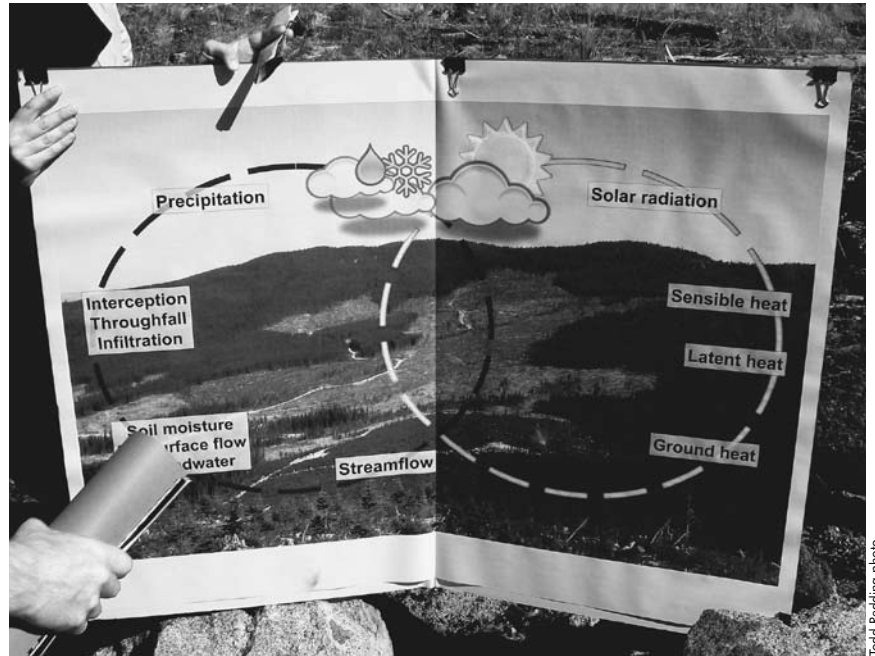


A summary of the Merritt Summer Field Tour

her thoughts on the potential hydrologic effects of large openings. Using an effective field diagram, she showed how large openings alter the flows of water and energy. To date, there has not been specific research on the hydrological effects of harvesting such large openings; however, knowledge gained from studies on smaller openings, and from prairie and tundra environments may be useful. Both tundra and prairie environments feature short vegetation that interacts with snow deposition differently than canopy trees. As openings get larger, there is a greater opportunity for loss of snow due to wind scouring and redistribution. These losses, together with periodic ablation prior to the main melt period on such exposed sites, could lead to similar or less amounts of snow prior to the onset of the main melt. It is also expected that the onset of spring snowmelt will be earlier in large openings and that the snowpack will disappear earlier. The hydrological effects of large-scale MPB infestation and associated salvage harvesting is a topic of considerable ongoing research and of a recent workshop in Kelowna (http://www.forrex.org/program/water/mpb_hydrology.asp).

During this SISCO summer field tour, participants had the opportunity to be updated on the monitoring of a variety of FREP (Forest and Range Evaluation Program) values. These include: Stand-level Biodiversity Monitoring, Fish/Riparian Effectiveness Evaluation, Soils Effectiveness Evaluation at the Cutblock-Level, and Timber-focused Evaluation of Partial Cutting. Initial results from the Stand-level Biodiversity Monitoring (presented by **Nancy Densmore**, Forest Practices Branch, MOFR) indicate that when compared to retained patches, similar volumes of coarse woody debris (CWD) are being left in the harvest area in the Cascades District; however, there is a lack of long pieces of CWD in harvested areas and large snags are also missing. While some of the sampling protocols for the Riparian Effectiveness Evaluation and the Soil Effectiveness Evaluation at the cutblock level were demonstrated to SISCO participants, no results were offered due to limited data collection in the Cascades Forest District. As evaluation procedures for FREP's timber-focused evaluation of partial cuttings is still under development, **Pat Martin** presented draft evaluation procedures for this value. For more information on the Forest and Range Evaluation Program, please visit <http://www.for.gov.bc.ca/hfp/frep>

Merritt, like many other communities in the Southern Interior of British Columbia, is subject



Todd Redding photo

to the threat of urban/forest interface fire and the MPB infestation has further magnified this issue. Merritt has a history of managing their interface against the risk of fire and this work is continuing under their new Wildfire Safety Plan. Using spacing, pruning, and underburning, the community has protected their area and also provided training opportunities for community volunteer firefighters in a controlled context. Working with local First Nations groups to identify areas that need to be protected for cultural reasons (for example, culturally modified trees) and other collaborative community efforts have ensured that disturbance plans are truly community-focused. SISCO participants also received an update on the Wildlife/Danger Tree Assessor's Course (WDTAC) and how it is protecting community members, specifically those working in the forests. This course teaches participants to identify valuable wildlife trees, to assess retained trees to determine their safety rating, and to prescribe the actions necessary to ensure worker and public safety. For more information on how to integrate dangerous tree management into plans visit the Wildlife Tree Committee (WTC) web site at <http://www.for.gov.bc.ca/hfp/values/wildlife/WLT/index.htm>

One of the final stops on this Summer SISCO field tour was a drive into the dry-belt Douglas-fir forests. In the past, these forests were the main fibre source for the Merritt area, and, after the

Hydrology in large openings diagram by Rita Winkler, research hydrologist with the MOFR's Southern Interior Forest Region.

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Next SISCO workshop set for March 31–April 2

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MPB-salvage opportunities are gone, they may become the basis for the survival of the local forest industry. The stand dynamics of these forests are very much influenced by the limiting factors associated with these ecosystems, such as moisture stress, competition, and budworm. According to **Catherine Bealle Statland** and **David Simpson** (both from the MOFR, Research Branch, Stand Development Modelling Group), foresters will need to have patience when managing these sites for timber as water is a major limiting factor and its presence will vary in time and space. Regenerating these stands may pose the greatest challenge as the research information indicates that understorey recruitment is

sparse and declining, even though seeds are being produced. Grass competition and drought stress appear to be the main cause of this, although the ever-increasing population of budworm may also be playing a role.

No article on summer SISCO can be complete without our thanks to the organizing committee for providing us with a diverse and informative program—congratulations on a job well done. We also hope that people can attend the upcoming Winter SISCO workshop set for March 31 to April 2, 2008 in Penticton where we will be exploring the term resiliency from a silviculture perspective (<http://www.siscobc.com>). 