

B

ugs & Diseases



August 2002

info note

Forest Product Movement

Alberta's mountain pine beetle management program focuses on surveying the area along the Alberta-British Columbia border for natural movement of beetles with the prevailing westerly winds. It calls for early detection and swift control action. However, due to the abundance of cheap, beetle-killed trees in British Columbia, infested wood has been imported into Alberta without authorization. A human-caused pest introduction is similar to a human-caused wildfire; it is unpredictable and difficult to detect.

The Alberta *Timber Management Regulation* controls the import of coniferous logs and forest products with bark attached. See the Forest Management Directive 2002-01 at <http://www3.gov.ab.ca/srd/forests/fmd/directives/> for more information on the importation of conifer logs or forest products with bark attached.

Crackdown on Unauthorized Timber Imports

Following the discovery of unauthorized shipments of conifer with bark being

imported into Alberta, Sustainable Resource Development (SRD) established check-stops for trucks at Alberta border crossings. In a little over one month, five loads that may potentially have contained destructive forest pests were intercepted. SRD is working closer than ever with Alberta Transportation and the RCMP to prevent unauthorized loads of timber from entering the province. ■

Hideji Ono

Spring Fire Salvage Tactics

Spring fire-killed trees are more susceptible to woodborer damage because the availability of these trees coincides with the flight period of woodborers. Provided are strategies to manage woodborers in fire-killed timber:

1. Promptly harvest and process fire-killed timber. This is the best overall strategy to minimize the value loss due to pest damage.
2. Prioritize harvesting as follows: first harvest trees with moderate burn intensity because they are most attractive to woodborers, followed by severely scorched trees to minimize checking (crack or flaw due to differential drying), and

- lightly scorched trees last.
3. Remove spruce first because they are more susceptible to woodborers than fir and pine.
 4. When decking fire-killed timber, stack logs tightly with severely burned logs on top. Maximize the shade by orienting decks north-south, with butt ends facing south, in shaded locations. Alternately, cover the log decks with branches to increase shading. Stack decks as high as possible with logs of uniform length; the staggered ends of logs are more susceptible to borer attacks.
 5. Monitor lightly scorched mature spruce that remain alive because these may be susceptible to spruce beetle attacks. ■

Sunil Ranasinghe

Are MPB Attracted to Fire-damaged Pines?

Fire has been proposed as a tool to manage mountain pine beetle (MPB) populations, specifically in areas where harvesting trees is not feasible, or where using a natural disturbance is desirable. High intensity fires are known to kill adult and larval beetles, but it is unclear how beetles respond to trees that have been damaged by a low intensity fire, as may occur at the periphery of a prescribed burn.

Previous researchers have suggested that MPB may be attracted to fire-damaged trees because the trees possess a weakened defence system. Beetle attraction to fire-weakened trees may be particularly pertinent in low-density beetle populations, where low population numbers restrict beetles to attacking trees with decreased defences. Experiments were conducted in Banff and Kootenay national parks in 2001 to determine whether mountain pine beetles preferentially attack trees that have been damaged by fire. Sites were selected

within the parks to encompass a range of beetle population densities, to test whether beetle response to fire-damaged trees is density dependent.

Results

The effect of fire damage was investigated by artificially burning 0/3, 1/3, 2/3, and 3/3 of the circumference of a tree's bole. Beetles did not preferentially attack fire-weakened trees. Beetle attack density and rate of attack were also independent of fire damage. Notably, beetle attacks on fire-damaged trees were more likely to produce successful egg galleries, but only in low-density beetle populations. In high-density beetle populations there were enough beetles to overwhelm the tree's defences in all burn treatments. Therefore, in low-density beetle populations, increased attack success on fire-damaged trees may serve to maintain the beetle population or facilitate the transition from an endemic to an outbreak population.



Ex-Forest Officer Bob Glover burning trees.

During the summer of 2002 we will measure the reproductive success of beetles in fire-damaged trees to get a direct measure of whether these trees are a better environment for larval development. If beetles have increased

reproductive success in fire-weakened trees, the effectiveness of prescribed burns as a tool to decrease beetle numbers may be reduced. Our results will help forest and park managers to better assess when and how fire may be used as a method for controlling beetle populations, and how beetles respond to natural fires. ■

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Choristoneura Cousins At It Again

Large aspen tortrix (*Choristoneura conflictana*) and spruce budworm (*Choristoneura fumiferana*) populations were lucky to have emerged after the cool spring weather had abated. In comparison to last year, populations of this defoliating duo have

expanded significantly. Results of the aerial surveys completed in the northwest part of the province this year show that several new areas were defoliated along with a general increase in the overall defoliated area.

Aspen Defoliation Survey

The large aspen tortrix was the most common aspen defoliator present in the area this year. Defoliation was recorded in many areas including: southwest of Rainbow Lake, along the Cameron Hills near the Northwest Territories border, John D'or Indian Reservation, Livock Tower, Peerless Lake, Cadotte Lake, in the Saddle Hills, Smoky Tower and Valleyview. Forest tent caterpillar (*Malacosoma disstria*) larvae were found intermixed with tortrix larvae in a few areas about 30 km south of Grande Prairie. A small number of aspen leaf roller (*Pseudexentera oregonana*) larvae were found intermixed with tortrix larvae in an area 5 km west of Sexsmith.

Spruce Budworm Survey

Results of the survey show that many new areas of spruce budworm defoliation were found along with expansions in previously defoliated areas. Areas along East and West Sousa creeks, the Chinchaga River, near Paddle Prairie Metis Settlement, Zama City and John D'or Indian Reservation all had significant increases from the previous year's defoliation. New areas of defoliation were recorded at the confluence of the Wabasca River and the Peace River, along the west border of Wood Buffalo National Park both south and north of the Peace River, near the confluence of the Mikkwa River and the Peace River, and within Notikewin Provincial Park along the Peace River. ■

Mike Maximchuk

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Stumping Research Spreads Roots

Sunpine Forest Products, Sustainable Resource Development and the University of Alberta are looking into the possibility of trying stumping and pushover logging to manage the Armillaria root disease. The study would look at the impact these treatments have on regenerated pine. The regenerating trees from the stumped and pushover areas will be compared to the trees growing in the unstumped area.



Excavator pulling Armillaria-infected stump.

This project will mirror the stumping trial near Boggy Lake. A site inspection of the study area is planned for next month to determine details and the scope of the project. ▣

Dan Lux

Verbenone – Just What the MPB Doctor Ordered

The mountain pine beetle (MPB) is killing trees in Banff National Park at the doorstep of Canmore, a community that

depends on tourist dollars. If the MPB invades communities like Canmore, the fate of aesthetically important, high value pine trees would be a cause for concern. Keeping this in mind, SRD is field testing the use of the MPB anti-aggregation pheromone – Verbenone – to protect mature pine stands. This pheromone emits a chemical that signals the MPB to stay away from the area with treated trees. This treatment has shown promise in recent field trials carried out in British Columbia and in the United States. ▣

*Dan Lux
Sunil Ranasinghe*

Black Army Cutworm Alert

Lush growth of herbaceous annuals in the aftermath of spring fires is an open invitation for black army cutworm infestations. This serious defoliator made its debut in the province in the summer of 1999, after the large-scale Virginia Hills Fire. This critter is known for spectacular but short-lived defoliation of large tracks of land. These caterpillars are primarily feeders of herbaceous vegetation but will severely defoliate any conifer seedlings that are in its path. Normally the infestations last one season and then collapse.

Forest companies planning to reforest the cutblocks of fire-salvaged timber have to be vigilant about the possibility of these infestations. One of the simplest remedies is to delay the planting of these cutblocks by one season so as to avoid the pest. ▣

Sunil Ranasinghe

Red Means Dead

The pine trees in Banff National Park that were attacked this year by mountain pine beetle are starting to turn red. The trees turn gold, then red in a few weeks. If anyone notices pine in or near the Park turning this color, please contact Dan Lux at (403)-845-8272. ■

Dan Lux

Woodborer Damage vs. Checking

Following the aftermath of spring fires experienced this year, woodborer damage is expected to be common in the fire-killed stands. Checking (crack or flaw due to differential drying) of the fire-killed timber is another peril the forest managers have to cope up with.



Whitespotted sawyer beetle - one of the most destructive woodborers.

SRD is planning a field study in the fire-affected stands of the Northeast 1 Forest Area to compare the woodborer damage vs. damage due to checking in the fall, spring and the following fall, post-fire. SRD hopes to record the incidence and severity of woodborer damage and checking at these time periods. A selected portion of the affected trees will be harvested at the end of each period and processed separately to find the impact of woodborer damage vs. checking damage on the quality of timber. ■

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IPM Group Scoop

On June 4, Sustainable Resource Development (SRD) and industry held an Integrated Pest Management Working Group meeting for stakeholders in the Southwest 1 & 2 forest areas. The agenda included updates on mountain pine beetle in Banff National Park, log haul bans, the SRD forest health plan 2002, browsing impacts on regeneration, stumping for Armillaria management, research needs, training needs, pest identification cards, and a discussion of the new Forest Health direction in SRD. Also discussed was prioritizing areas for this year's aerial surveys. The next meeting will be held in spring, 2003.

Members of the Northwest Boreal Integrated Pest Management Working Group will be meeting on August 7, 2002 to further discuss the long-term implementation of the forest health monitoring system. Confirmation of partners will be the main objective of the meeting as well as to initiate the steps to start the project during the 2003 season. ■

*Dan Lux
Mike Maximchuk*

A Host's Lament

Straight and true, robust and strong,
What should have been has now gone wrong.

At first my form seemed good and blessed.
I stretched proud limbs for all to see.
But now I'm stunted, growth repressed,
Twisted, gnarly as can be.

I pine for the Pine I could have been,
To grow the way I'd like to grow.
I curse that I'm an evergreen,
Infected with Dwarf Mistletoe.

My cohorts too, like me they suffer,
As sticky seeds rain down in the falls.
If only we had had a buffer,
From those damned residuals

Straight and true, robust and strong,
What should have been has now gone wrong. ■

Tom Hutchison



Dwarf mistletoe infected pine.

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