

B

ugs & Diseases



December 2003

info note

To cut or not to cut?

The preliminary results of the study on woodborer vs. checking damage on fire-killed timber indicate that checking overall has a bigger impact than woodborer damage on the grade of dimensional lumber. This is because the grading standards allow a fair number of “worm-holes” in all except 1”-thick pieces of dimensional lumber. Although woodborer attack is prevalent on fire-killed timber in the first year after the burn, the resulting lumber does not get downgraded often. The 1”-thick pieces get downgraded because of the cosmetic effect caused by the worm-holes. The other findings of this study confirm that moderately burned timber is more attractive to woodborers than either lightly or severely burned timber. The second-year phase of this study will be completed in 2003-04 and will include an economic impact analysis of woodborer damage. ■

Sunil Ranasinghe

Aspen defoliation in the northeast

This year, in the Northeast Corporate Region (northeast), insects defoliated over 575,000

hectares of aspen. This is a dramatic increase compared to the 127,000 hectares defoliated in 2002. In 2001, there was no large-scale defoliation observed in the northeast. Rapid expansion in aspen defoliation has not been totally unexpected. Huge large aspen tortrix infestations have been moving east across the Northwest Corporate Region for the last four years. Ground truthing surveys in 2002 and 2003 in the Waterways Corporate Area (waterways) found that the prime cause of the defoliation was the large aspen tortrix. Although, this year another moth caused a fairly large component of the defoliation – the aspen twoleaf tier (*Enargia decolor*).

New kid on the block

Enargia decolor is a noctuid moth that feeds on aspen, birch and willow.



Adult *Enargia decolor* moths

The larvae feed within two leaves tied together with silk, like two hands clasped in prayer. It has a trans-continental distribution and has caused previous defoliation in the prairie provinces. According to "Tree and Shrub Insects of the Prairie Provinces" (Ives and Wong, 1988), recorded outbreaks have been of short duration and caused no permanent damage to the affected trees. Occasionally, it has caused severe localized defoliation.

This summer, the aspen twoleaf tier appears to have exploded across the entire northeast. Evidence of this insect was found during ground truthing survey in almost all the sites visited in waterways. Additionally, *E. decolor* moths were caught in pheromone traps, often by the hundreds. This moth appears to be attracted to a broad range of pheromones. They were found in pheromone traps intended to catch spruce budworm, forest tent caterpillar and gypsy moth. At one forest tent caterpillar pheromone trap locations, the number of *E. decolor* moths caught averaged 823 between two traps.

The pheromone traps with the highest counts of *E. decolor* were from the southern portion of the region in areas where no large-scale defoliation was noted during this year's aerial overview survey. It may be that despite being abundant in these areas, *E. decolor* by itself does not cause as severe defoliation as the large aspen tortrix or the forest tent caterpillar. However, as part of a complex of defoliators coupled with drought, the aspen twoleaf tier may contribute detrimentally to the health of the region's broadleaf trees. ■

Tom Hutchison

What the heck is a red attack?

Aerial surveys are effective in identifying mountain pine beetle "red attack" trees. These are trees with red crowns as a result of being attacked and killed in the year prior to the aerial survey. A "red attack" tree contains no beetles beneath the bark. By the time the crown of an attacked tree turn red, the adults have emerged to seek out new hosts. The locations of "red attack" trees are used to narrow the ground survey search area to identify attacked trees the beetles are currently in, i.e., "green attack" trees. A "green attack" tree may appear healthy from the air, but have signs of attack visible to ground surveyors. As well these trees still contain beetles beneath the bark, and are therefore targeted for control. Based on the number and success of individual beetle attacks on a tree, a "green attack" may or may not be killed to become "red attack". ■

Mike Undershultz

Beetles found in and out of the Willmore

Within the Foothills Corporate Area this year, mountain pine beetle pheromone baits were set up at two new locations. One new plot was located in Kakwa Provincial Park along the Lower Kakwa River, and the other along the Sheep Creek. Mountain pine beetles were trapped at both these sites. A ground survey showed that only the baited trees were attacked. The beetles within these sites will be left until spring, and then surveyed to determine overwinter mortality. Control action will be taken prior to beetle flight in 2004.

These plots are the first to have detected a presence of mountain pine beetle directly east of Willmore Wilderness Park.

Meadowland Creek Control

During the 2003 mountain pine beetle aerial survey of the Foothills Corporate Area, several new "red attack" and fading trees were detected along the south-facing slope of Meadowland Creek within the Willmore Wilderness Park. While ground truthing the red and fading trees to confirm mountain pine beetle as the causal agent, 14 "green-attack" trees were detected. These 14 trees, as well as any others found by subsequent surveys will be cut and burned this winter. ■

Erica Lee

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Bugs & Diseases informs LFD, Industry and other forestry-related personnel about current forest health issues. Articles and ideas are welcome! Submission deadline is the 15th of the month before publication.

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Mountain pine beetle surveys in the south

Aerial surveys to locate "red-attack" trees were intensified in 2003. Both the Southern Rockies and the Clearwater corporate areas were surveyed.

Only in the Bow Valley "red-attack" trees were found. There were 17 suspect trees in the Bow Valley and these represent trees that were missed in last year's control operation. The red trees suggest that 1009 out of 1026 "green-attack" trees were removed (98.4%) last year. This is viewed as an overwhelming success for the program in 2002/2003.

Ground surveys

During the week of September 22-26, 2003, personnel from Spray Lakes Sawmills, Banff National Park, Community Development, Bow Valley Provincial Park, Morley Indian Reserve, and Sustainable Resource Development (SRD) volunteered to survey the Bow Valley.

The goal of the walk-through surveys was to identify general areas that contained "green attacked" trees in the Bow Valley. The areas surveyed were selected based on the mountain pine beetle hazard rating and proximity to known "red attack" trees. At least 60% of each area was surveyed and the focus was on the large diameter pine stands. A handheld global positioning system (GPS) recorded the track followed by surveyors. The track information was mapped to determine future survey areas.

The walk-through surveys resulted in over 400 km of trails examined and identified 19 "green-attack" trees.

The results of the walkthrough surveys helped to identify areas to be surveyed in more detail using transects. A three-person survey crew was hired in November and hope to complete the transect surveys by January 2004. To date 53 “green-attack” trees have been identified.

Once the surveys are completed a control plan will be developed and implemented. ■

Dan Lux

Defoliation in the northwest

Spruce budworm

In the High Level area, 2003 marked the 17th consecutive year of a spruce budworm outbreak that was first recorded in 1987. This year defoliation was generally less intense than in 2002. However, new areas of defoliation were spotted within the Northwest Corporate Region.

Within the Upper Hay Corporate Area, an estimated 90,000 hectares of white spruce stands were defoliated in 2003. This is less than that recorded in 2002 (95,849 hectares). Moderate defoliation occurred along the Hay River near the British Columbia border, West Sousa Creek, East Sousa Creek, the Chinchaga River and southwest of High Level. In all the other areas, the defoliation remained at levels similar to those of 2002.

Within the Peace Corporate Area, an estimated 14,813 hectares of white spruce stands were defoliated, similar to the area recorded in 2002 (15,582 hectares). The main area of defoliation was within the Paddle Prairie Metis Settlement

where some stands appear to be suffering with tree mortality due to years of budworm feeding. Two small areas of new defoliation were discovered this year along the Peace River north of Notikewin Provincial Park.

New areas of defoliation were found this year within the Lesser Slave Corporate Area. An estimated 2,584 hectares of defoliation were recorded in areas near Little Buffalo Lake (northeast of Wabasca), by Chipewyan Lakes, east of North Wabasca Lake and near Brintnell Lake located north of Lesser Slave Lake.

Aspen defoliation

As reported in the last issue, aspen defoliation levels once again increased this year. Large aspen tortrix (*Choristoneura conflictana*) populations were once again the main cause of the defoliation. Large aspen tortrix defoliated aspen stands at varying levels of intensity over 4,443,926 hectares within the Northwest Corporate Region. This is an increase of 24% from 2002 (3,594,951 hectares). Once again, defoliation occurred further east this year than last. ■

Mike Maximchuk

Get stuck in the forest health web

Do you want to know what the forest pests were doing in 2003? See for yourself! The 2003 aerial and ground survey data has been posted on the Forest Health website. Check out the conditions and maps and the survey data sections. Don't be left out, you too can download the new data!

Don't stop there! You can also find downloadable annual reports, the new "Focus On" article for forest health, and mountain pine beetle pest alert information.

For internal users the forest health ArcExplorer projects have been updated, aerial survey data have been loaded onto the citrix server, and 2003 FIRES data are available for use. You can also download the data from the internal FTP server.

External website:
<http://www3.gov.ab.ca/srd/forests/health/>

Internal website:
http://www.env.gov.ab.ca/internal_srd/dfd/FH_internal/ ■

Cody Crocker

Forest health monitoring system update

Members of the Northwest Boreal Regional IPM Working Group began implementation of a forest health monitoring system in the Northwest Corporate Region. Participants in the project included Sustainable Resource Development, Alberta Plywood Ltd., Buchanan Lumber, Canadian Forest Products (Grande Prairie) and Manning Diversified Forest Products. A contractor was hired by the group to complete all associated surveys within each participant's area of interest and provide a database of information.

Participants were responsible for completing growth and yield measurements within their own permanent sampling plot (PSP) network. A total of 842 PSP's, located within seven forest

management units, were included within the monitoring system. Each of the 842 forest stands that contained a PSP was visually inspected from the air. Observers recorded the type and intensity of the suspect damage as well as the general condition of the stand. If a stand contained suspected insect and disease damage, observers targeted the stand for a follow-up ground inspection.

The estimated project costs for this season were \$47,000. Details on the first year implementation of the system will be reported this winter. ■

Mike Maximchuk

Insect and disease posters revised

The Forest Health Section is pleased to announce the new forest health poster. This poster is a revised version of the "Important Forest Insects of Alberta" and "Important Forest Diseases of Alberta", and was again produced in collaboration with the Canadian Forest Service. This new doubled-sided poster (24" by 30.75") illustrates major forest insects on one side and forest diseases on the other.

Limited bulk copies may be requested from the Alberta Environment Information Centre:
Main Floor, 9920 - 108 Street
Edmonton AB T5K 2M4
Phone: (780) 944-0313
Fax: (780) 427-4407 ■

Christine Kominek

It's an odd year!

The two-year cycle budworm (*Choristoneura biennis*) population within the Willmore Wilderness Park is in a year of low moth occurrence. Moth counts ranged from 1 - 47 moths per trap. The number of moths caught next year is projected to increase. Current and previous year's trap catches indicate moth counts are low in odd years and high in even years.

Foothills and Woodlands corporate areas are at a low risk of spruce budworm outbreak with trap catches ranging from 10 - 137 moths per trap. ■

Erica Lee

Seasons Greetings



Drought stress lament

I'm thirsty, I'm thirsty
I can't get to water
The summers
They seem to be drier and hotter

I'm thirsty, I'm parched
My needs I can't slake
This weather
Is more than I think I can take

I'm thirsty, I'm fading
My fine roots are dying
The soils
Supporting my base are still drying

I'm thirsty, I'm wilting
My leaves have chlorosis
This drought
Is not helping my long term prognosis

I'm thirsty, I'm desperate
I need some good rain
Next season
I hope this won't happen again ■

Tom Hutchison

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