Bugs & Diseases

December 2004

info note

Red-attacked pines discovered in the Crowsnest

Aerial surveying to identify red-attacked mountain pine beetle (MPB) trees was intensified in 2004. In the Southern Rockies and Clearwater areas, the goal was to survey 70 per cent of the stands having a high or extreme hazard rating.

This year's aerial survey has identified a new threat arising in the south. Two patches of 10 MPB-killed trees were discovered east of Tent Mountain, south of the Crowsnest River. Crews will fly into the area in the new year to look for green-attacked trees and control the infestation before it has a chance to spread.

British Columbia's pine forests adjacent to Alberta are heavily infested. The Sparwood area has experienced a ten-fold increase in beetles over the last two years. Plans are in place to meet with the British Columbia Ministry of Forests and Tembec Industries in early December to plan the control efforts and prevent the infestation from spreading east into Alberta. ◘

Dan Lux

Unravelling the mystery of the disappearing defoliators

As reported in the previous issue, large aspen tortrix and spruce budworm populations within the Northwest Region were significantly lower this year than in 2003. Large aspen tortrix disappeared from all parts of the region except near Grande Prairie, yet forest tent caterpillar populations rebounded in two separate areas of the region. Spruce budworm defoliation disappeared in all but a few areas along the Peace River near John D'or Prairie and Wood Buffalo National Park and in an area near Fort Chipewyan.

Focusing on the variation in spring temperatures could provide some insight into these events…

Around the town of Peace River, the first trembling aspen trees began to flush on April 27. Other trembling aspen trees in the region began to flush during the next several days as daytime temperatures ranged from 13 to 22 °C; however, over the next four weeks there were three significant changes in temperature patterns that might have influenced the defoliator populations.

Alberta
SUSTAINABLE RESOURCE DEVELOPMENT

Beginning on May 3, the northern parts of the region cooled significantly for a period of 10 days. During this period daytime temperatures ranged from 1 to 8 °C, and night-time temperatures ranged from -1 to -14 °C. On May 15, it began to warm up for the next four days, with daytime temperatures ranging from 17 to 28 °C and night-time temperatures ranging from 5 to –3 °C. Finally, a short cool period returned for several days when daytime temperatures ranged from 5 to 14 °C and night-time temperatures ranged from -1 to -7 °C.

Large aspen tortrix larvae emerge from hibernation at about the time new aspen buds begin to swell, or approximately 7-10 days before aspen trees begin to flush. Therefore, the majority of the large aspen tortrix larvae had probably emerged by early May and were killed by the sub-zero temperature at that time.

Forest tent caterpillar larvae hatch later than large aspen tortrix, at about the time that the aspen trees begin to flush. Therefore, within the two outbreak areas, the forest tent caterpillar larvae probably hatched after the frosts in early May and were able to survive the second, less severe frosts in late May.

Spruce budworm larvae emerge when white spruce buds begin to swell, typically around mid-May. Budworm larval development is synchronized with the various stages of white spruce bud development. As a bud develops into a fully flushed shoot, the larva grows and changes its feeding pattern to correspond with the bud's appearance. It is possible that in 2004, the variations in spring temperatures caused the buds to develop at rates not suitable for developing larvae. Could this have significantly reduced budworm survival?

Another interesting observation made this season was large areas of damage to aspen foliage due to the spring frosts.

Frost-damaged trembling aspen leaves near John D'or Prairie in 2004

Interestingly, the only areas of significant budworm defoliation were observed near Wood Buffalo National Park within a frost-damaged area. Daytime temperatures recorded at a nearby fire lookout between May 3 and 12 were rarely above freezing. Night-time temperatures ranged from -6 to -15 °C, cooler than in other parts of the region. Were the early May temperatures in this area cold enough to delay the development of white spruce buds, thereby keeping the budworm/white spruce synchrony in balance? ◘

Mike Maximchuk

There's beetles in them there hills

During the annual aerial survey conducted on September 13 and 14, red pine trees were detected in the Casket Lake, Beaverdam Creek/Avalanche Creek, and Meadowland Creek areas.

As of December 1, 2004, 276 and 187 green-attacked pine trees have been identified in the Casket Lake and Beaverdam areas respectively. Once the ground surveys in all three areas are completed, control work will begin. ◘

Erica Lee

Invasive plant co-op success

Cooperative invasive plant management was SRD's number one spending priority in southwest Alberta in 2004. A large, multi-stakeholder control project within a 250 square kilometre area finally came to fruition. Project partners include Fortis Alberta, Calpine Canada Resources, Fairbourne Energy, Husky Oil, Sundance Forest Industries and Northrock Resources. Each company treated the tall buttercup on their leases and SRD treated all of the adjacent infested vacant crown land. A very thorough and effective kill was achieved. With a bit of luck, good residual control will be seen next year. ◘

Dan Lux

Bugs & Diseases *info note*

Vol. 15 No. 3
ISSN No. 1499-5859 (print version)
ISSN No. 1499-5867 (online version)

Published Apr., Aug., and Dec.
by the Forest Health Section,
Forest Management Branch,
Public Lands and Forests Division (PLFD)
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Bugs & Diseases informs PLFD, 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.

Beyond Alberta's borders

Just before the Grey Cup, I was in Ottawa for a one-week meeting with my federal and provincial colleagues. Here is some of the interesting forest health information I picked up from across the country.

The MPB is now affecting over seven million hectares in B.C. and the end is nowhere in sight. B.C.'s Peace District on the eastern slopes of the Rockies alone has more than 3000 infestations. It is estimated that the current infestation in B.C. has killed 260 to 290 million cubic meters of mature pine trees. In the 2004-05 season, 29 million cubic meters of harvesting will be MPB-related. B.C. has about 800 million cubic meters of mature lodgepole pine in the province and is predicting 80 per cent mortality by 2013. This could reduce B.C.'s annual allowable cut by 20 per cent and affect as many as 58,000 jobs. More information is available at www.mountainpinebeetle.com

Currently in the United States MPB has infested 890,000 hectares. The mountain pine beetle infestation in the northwestern United States is expanding toward the Alberta border.

The federal mountain pine beetle initiative program will end October 2008. I encourage all researchers to check the Pacific Forestry Center website at http://mpb.cfs.nrcan.gc.ca/ for opportunities.

Other notes:

- The spruce budworm population is down throughout Canada.
- Hurricane Juan blew down 70 per cent of trees in the Point Pleasant Park in Halifax, Nova Scotia where the brown spruce long-horned beetle eradication program is being implemented. I predict an explosion of woodborer populations there.
- Good news about scleroderis canker! Lodgepole pine and jack pine are resistant to the European strain of this disease.
- Invasive plants cost the United States $13 billion annually. In the past year, the U.S. spent $5.2 million on State and private lands and $18 million on National Forest land to manage invasive plants. ◘

Hideji Ono

Pheromones in the Foothills

Spruce budworm pheromone traps set up in the Woodlands and Foothills areas indicated a low risk of outbreak in 2005. The traps set up in the Willmore Wilderness Park indicate there is a moderate risk of outbreak next year.

No gypsy moths were caught this year in either area.

Fifteen mountain pine beetle tree bait sites were set up in the Foothills Area this year. The Jackpine River/Spider Creek site, located in the Willmore Wilderness Park was successfully attacked. As well, the Bloodroot Creek site, located outside of the Willmore border along Sheep Creek, was successfully attacked. ◘

Erica Lee

Woodborer study mill suffers setback

In the August newsletter we provided an update on our woodborer study and gave thanks to the many project participants. Sadly, one of the major contributors to this study has suffered a serious setback.

On October 6, 2004, the St. Jeans Lumber mill in Breynat burned down. As mentioned in the August article, St. Jeans has provided invaluable assistance and exemplary service supporting our Woodborer study thus far. From the initial selection of sites, to harvesting, to sampling logs, to the final processing of the lumber – their assistance was first rate, and much appreciated. Personally, I have enjoyed working with them during the course of this project.

I was shocked when I heard about the fire at their mill. I think I can speak for everyone involved in expressing our sympathy, and wishing them all the best in getting their operations back to normal. ◘

Tom Hutchison

Pine beetles in the Northwest

Mountain pine beetle tree baits were set up in four locations within the Smoky Area in 2004. Of these four bait sites, two had confirmed MPB attacks. The two sites were located near the British Columbia border,

southwest of Grande Prairie. One site was located north of the Narraway River, and the other site was located north of the Wapiti River. At the Narraway River site, 16 attacks were recorded. None of the attacks were successful, meaning that there was no egg laying observed. At the Wapiti River site, 10 attacks were recorded. Again, none of these attacks were successful.

The results of the pheromone baiting survey confirm that small numbers of MPB are migrating into the area. It is possible that these beetles are long-distance migrants from the Prince George outbreak, more than 150 kilometers away. ◘

Mike Maximchuk

Tracking exotics

Exotic forest pests are a looming threat to our forest resource. Recently, exotics such as the brown spruce longhorn beetle and emerald ash borer have made headlines with their devastating impact on Canadian forests. Increased globalization of trade and travel, combined with the limited resources available to check incoming goods and people have both had a significant impact on efforts to keep these undesirable pests out of Canada.

Adult emerald ash borer. An insect introduced to North America from Asia.

As a proactive measure, SRD's Forest Health Section has initiated a pilot program to detect exotic forest pests in and around Fort McMurray in northeast Alberta. Humming with its multi-billion dollar oilsands projects, this city located amidst the boreal forest has been a magnet for migrant workers and imported machinery.

A team of SRD and Canadian Food Inspection Agency personnel recently scouted out potential sites to lay traps for potential exotic forest pests in and around Fort McMurray. This team is fortunate to receive the enthusiastic cooperation of local municipal and industrial partners, who suggested potential sites and expressed willingness to help service the traps once deployed. Initially, a combination of lures aimed at either conifer-loving or broadleaf-loving insects will be used to detect exotics at each location. Hopefully, we will not find any exotic forest pests of concern but we will keep our fingers crossed pending the survey results. ◘

Sunil Ranasinghe

Bow Valley Beetle BBQ Continues

This year's mountain pine beetle ground survey and control program in the Canmore area is just getting started. Between December 1 and 3, volunteers from SRD, Community Development, Banff National Park, Spray Lake Sawmills, Sunpine Forest Products, Rocky Wood Preservers, and interested citizens will descend upon the Bow Valley to look for infested areas. Following this initial survey, a SRD crew will intensively survey the areas identified to find all green-attacked trees.

All infested trees will be treated before June 1, 2005.

Dan Lux

Provincial MPB survey and control crew

This year, SRD has hired a 4-person provincial MPB survey and control crew. They began working on November 1st and will continue through to the end of March 2005. Currently the crew is working in the Willmore Wilderness Park and will relocate to the Canmore area in February. Two additional crew members will be hired in January to begin surveying the Canmore area.

Erica Lee

2004 integrated pest management forum

On November 5, 2004, SRD and the Canadian Forest Service hosted the 8th annual provincial integrated pest management forum in Edmonton. It was well received by 42 attendees from research and education institutions, government, and the forest industry. Topics included current pest conditions, mountain pine beetle operations and research, Armillaria root disease survey methodology, exotic pest updates and the latest forest health research.

For meeting details, please visit our web site at: www3.gov.ab.ca/srd/forests/health/coop_ipm.html

Christine Kominek

Where'd all the tortrix go?

Sung to the tune of "Rudolph the Red-Nosed Reindeer"

Where'd all the Tortrix go to?
Used to be we had a lot.
Now in last summer's surveys,
We couldn't seem to find diddly squat.

Most of the other insects,
Seem to be around to stay.
But *Choristoneura conflictana*,
Appears to have just gone away.

For the last 3 years or so,
They were on the rise.
Now this year it don't seem right,
It's like they packed up overnight.

Where'd all the Tortrix go to?
Used to be we had a lot.
Now in last summer's surveys,
We couldn't seem to find diddly squat.

Tom Hutchison

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