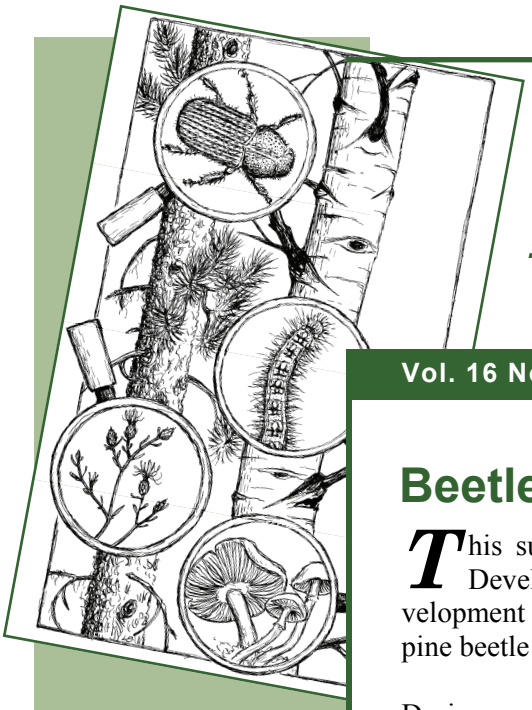


Bugs & Diseases

Vol. 16 No. 3 December 2005

Alberta's eye on forest health

Issue highlights:

Beetle battle intensifies

This summer, Sustainable Resource Development and Community Development undertook a large mountain pine beetle control program.

During a routine flight in early July, 506 fading trees were detected in the Muddywater and Fetherstonhaugh drainages in the Willmore Wilderness Park (WWP). Ground surveys confirmed that the fading trees had been mountain pine beetle-infested, with beetles still developing beneath the bark.

Forest Health Officer, Erica Lee, carves out a few mountain pine beetles from an infested pine tree.

Within one week, a large base camp was set up in the WWP, an overhead team was in place and Type 1 firefighters were on scene to cut and burn infested trees. From July 11 – August 7, just under 300 people worked to survey and cut and burn 5301 beetle-infested trees. In addition, 1074 pheromone baits were deployed in the WWP and Kakwa Wildland Park.

The battle continues...

The annual aerial survey for mountain pine beetle in the WWP Area and surrounding area intensified in 2005. The flights took 35 hours over 6 days to complete. In total, 2342 fading and red trees were detected. A 4-person ground survey crew is currently working in the Willmore searching for the currently infested (green-attacked) trees. Ground surveying will continue over the winter and all infested trees will be cut and burned before beetle flight in 2006.

Erica Lee

Alberta Sustainable Resource Development

Predictions are tricky

Making predictions can, at times, make one look foolish. Consider the following predictions, for example. In 1823, Dr. Dionysus Lardner (a respected science writer and professor of Natural Philosophy & Astronomy at London's University College) predicted that high-speed rail travel would be impossible. He warned that passengers, being unable to breathe, would die of asphyxia. The same Dr. Lardner, (1838) foretold that "men might as well project a voyage to the moon as attempt to employ steam navigation against the stormy North Atlantic Ocean". Albert Einstein, in 1932, predicted that nuclear power would not be possible. Ken Olsen, President of the company Digital Equipment, stated (in 1971) "there is no need for an individual to have a computer in their home." In 1981, Bill Gates, thought, "640k ought to be enough for anybody." Predictions, as I said, are tricky.

Notwithstanding the preceding, I will offer the following predictions.

In 2006, spruce budworm (SBW) caused defoliation will increase in the Northeast Region (especially Waterways Area). Pheromone trap counts, this year, indicate that SBW populations are on the rise regionally. Overall, average trap counts were higher this year in the Lac La Biche Area (LLB), and much higher in the Waterways Area than in 2004. Of the 28 plots in the LLB Area, 72% had increased average moth counts. Of the 22 plots in the Waterways 16 had higher average moth counts. Additionally, some counts in the Waterways Area were extremely high. The percentage of plots indicating a high risk of outbreak, in the Waterways Area, doubled from that seen in 2004. On the ground, severe SBW caused defoliation was clearly evident this year in and around Ft. McMurray. The Municipal District of Wood Buffalo conducted predictive egg mass surveys on several sites. Preliminary results show that many of the areas sampled will have high to extreme budworm populations in 2006.

"In 2006, spruce budworm (SBW) caused defoliation will increase in the Northeast Region..."

Forest tent caterpillar (FTC) populations will increase dramatically in the Northeast Region, in 2006. If you are living in the Northeast Region, FTC will be coming soon to a neighbourhood near you. From the overview flights conducted this year the total area containing insect-caused broadleaf defoliation increased significantly compared to 2004. In fact, the area defoliated was probably far greater than that noted during these flights. Most of the defoliation noted was, again, found in the Waterways Area. Ground truthing, conducted late in the summer, determined the primary agent for this defoliation was FTC. In addition to the increased area of FTC caused defoliation, average FTC pheromone plot counts in the LLB Area were higher at 23 of 25 sites compared with those of 2004. All of these values are higher than those noted in previous years. The highest plot count (334 moths/trap), at Bear Creek, was over 3 times the highest average plot count in 2004.

"If you're not fond of caterpillars, for you, 2006 may not be a banner year..."

As one can see, indications are that populations of SBW and FTC are expanding in the Northeast Region. As well, we have had an unseasonably warm fall thus far, which should promote over-wintering survival. Given this, I feel confident with the predictions I have made. If you're not fond of caterpillars, for you, 2006 may not be a banner year in the Northeast Region. However, predictions are tricky. We may get a late spring frost, or some other variable to make me seem way off mark – like the predictions I started this article with. John Tulley, in his Almanac for 1688 wrote "for all predictions do to this belong: That either they are right, or they are wrong."

Tom Hutchison

Partnering to control MPB in municipalities

Sustainable Resource Development is working on a cost-sharing program with municipalities at risk of mountain pine beetle attack. Canmore and the municipal districts of Bighorn and Crowsnest Pass will be eligible this year.

The aim is to ensure the municipalities undertake beetle control activities on their land (and on private land). SRD is committed to help with training, data collection, technical advice and cost.

Dan Lux

Smokin' out the beetles in the Smoky

It seemed to be just a matter of time…mountain pine beetles have started to notably invade the Kakwa country.

During aerial and ground surveys in early July, 270 infested trees were detected in Kakwa Wildland Park and other parts of the Smoky Area. There was enough time to cut and burn 197 of the trees before the beetles began to take flight. The remaining 73 trees had baits placed next to them to attract as many of the emerging beetles as possible. These remaining infested trees will be cut and burned this winter.

Another round of aerial surveying was completed over four days in late August and late September. Ninety-six red-attacked trees were detected in many areas of Kakwa Park, along Copton Creek and north towards Two Lakes. The next step was to round up some motivated individuals and complete ground surveys at each of the infestation locations to find currently infested trees in the vicinity. Over 8 days, 10 SRD staff from the Northwest Region walked the rugged country and located approximately 260 trees that will be cut and burned later this winter.

To our west, the Dawson Creek District in British Columbia has its hands full. They have detected an estimated 72,332 red-attacked trees this year within the District, some as far north as Williston Lake. In addition, they have detected another 1300 trees within the BC side of Kakwa Wildland Park. These numbers are up significantly from the 26,482 trees found in 2004.

MPB ground survey crew (from left to right): Mark Feser, Dennis Froese, Bob Martin (pilot), Jason Handfield, Mike Maximchuk, Daniel Gaughn, Neil Harpe, Michael Kozij, and Liana Luard. Missing: Christopher Balaski, and Geoff Atkinson.

Mike Maximchuk

Get to know your forest health officer

Here we continue with the series of interviews designed for you to get to know an FHO. I recently travelled to Rocky Mountain House and met with Christie Ward, the most recent addition to Sustainable Resource Development's forest health team. I spoke with Christie about herself and her new job.

Mike: So Christie, seeing how you have just recently replaced Dan Lux in Rocky Mountain House as the Forest Health Officer for the Southwest 1 & 2 areas, I'd like to welcome you to the wonderful world of forest health.
Christie: Thanks Mike, It's great to finally meet you in person.

Forest Health Officer, Christie Ward

Mike: Just to get stared, I'm going to ask a few "get to know you" type questions.
Christie: All right.

Mike: Can you tell me a bit about your past, education background and forest health related work experiences?
Christie: Well, I'm 28. I was born in Edson, moved all over Alberta as a forestry brat and then settled in Lac La Biche where my family still lives. I attended the University of Alberta, and got my BSc degree in Forest Management in 1999. Most of my work experience is in ecology/forestry. I spent 5 summers with forest industry doing ecosite surveys, 3 summers on a helitack crew, and have since worked for forest protection in communications roles.

Mike: When you were growing up in Lac La Biche, did your friends have any nicknames for you?
Christie: Hmmm...well one thing they used to call me was Wardo. The rest I am not willing to reveal.

Mike: Do you have any hobbies or other interests?
Christie: Travel, diving, skiing, anything outdoors like hiking, biking, camping, s'mores.

Mike: When you were a kid, did you always lay awake dreaming of being a Forest Health Officer, or was there something else you wanted to be when you grew up?
Christie: Actually, when I was growing up I wanted to be an orthodontist. I think I just wanted to be rich.

Mike: Do you have a favorite or least favorite forest pest?
Christie: No, not really.
Mike: Mmmm. Maybe one will grow on you – figuratively of course.

Mike: I imagine that by now you've met all the other forest health officers and provincial forest health staff. Who do you think will be least likely to provide coffee and doughnuts at our next meeting?
Christie: Who cares about coffee and donuts, I wanna know who's bringing the beer and pizza.

Mike: Well maybe we'll wait till after the meeting for that. Do you have any bad forest health related experiences that you want to share?
Christie: Anything aerial is a bad experience for me. A couple of weeks ago my pilot was actually making braking sounds every time he stopped abruptly or turned sharply. Needless to say I didn't find it amusing with my head in a "sick sac".

Mike: Well, that's about all I have to ask you today. Thanks again for doing this.
Christie: No problem Mike, I enjoyed myself.

Christie Ward & Mike Undershultz

Down by the river – budworm holds on

This marks the 19th consecutive year that spruce budworm defoliation has been recorded in the Upper Hay Area. Although much smaller than during the peak period in the mid-1990's, severe and moderate budworm defoliation occurred mostly along the Peace River, from the Wabasca River to the border of Wood Buffalo National Park. As well, small areas of moderate defoliation were recorded near Chipewyan Lakes in the Lesser Slave Area.

Spruce budworm pheromone trap catches are used to predict the risk of outbreak within a stand in the following year.

Levels of defoliation were similar to those in 2004 (9,152 hectares) with a net area of 8,440 hectares recorded in 2005.

Budworm pheromone trap plots were established at 138 locations within the Northwest Region in 2005. Tolko Industries – High Level (70 plots) and Manning Diversified Forest Products (11 plots) also participated in this year's survey.

The trap catches were as follows:

- 112 plots (81.2%) had moth counts indicative of a low risk of outbreak within the host stand in 2006;
- 23 plots (16.7%) - moderate risk; and
- 3 plots (2.1%) - high risk.

Moderate risk moth counts were collected only in the Lesser Slave and Upper Hay areas. All high risk plots were located in the Upper Hay Area; two were located near Zama City, northwest of High Level, and the other plot was located along the Wentzel River, east of Fort Vermilion.

Mike Maximchuk

MPB spread control team dispatched

The mountain pine beetle Spread Control Overhead Team is comprised of Sustainable Resource Development (SRD), British Columbia Ministry of Forests, and British Columbia Parks staff. The overall goal of the team is to ensure that BC districts are working to reduce the spread of beetles into Alberta.

"...working to reduce the spread of beetles into Alberta."

SRD representatives, Hideji Ono and Dan Lux, along with the team are tasked with reviewing and commenting on the proposed beetle control activities adjacent to the Alberta border.

A review took place in November, and a report will be sent to the BC districts in January that will comment on the government and industry's control plans.

Dan Lux

Moth mating madness

Insects are well known for their ability to mass reproduce. A great example of this occurred over the past year in the Upper Hay and Lesser Slave areas. Populations of forest tent caterpillar exploded in these areas and the extent of the defoliation they caused was amazing.

In the Northwest Region, the forest tent caterpillar defoliated aspen stands at varying intensities over a gross area of 2,661,587 hectares in 2005. Compared to 2004 (287,244 hectares), this is a 926.6 % increase in the area defoliated by this species. The largest area of defoliation extended from near Rainbow Lake to High Level, and from north of Paddle Prairie to areas along the Steen and Yates rivers. A smaller outbreak within the Lesser Slave Area was recorded from Teepee Lake to Little Buffalo Lake, and south from South Wabasca Lake to Chipewyan Lakes.

"...a 926.6% increase in the area defoliated..."

In reverse, large aspen tortrix populations continued to decline in the Northwest Region in 2005. Only 226,710 hectares of defoliation were observed in the Smoky and Lesser Slave areas. Defoliation was mainly located south of Grande Prairie.

Mike Maximchuk

Woodborers vs. checking - the verdict is out

The final analysis of the results of a two-year study on the impact of woodborer damage vs. checking on spring fire affected mature white spruce in northeast Alberta has shown the following:

1. Incidence of woodborer damage was higher in the first year compared to the second year post-fire; most woodborer damage occurred on moderately burned timber;

2. Higher percent incidence of checking in the second year post-fire compared to the first; most checking damage was on severely burned timber;

3. Woodborer damage had no impact on the grade of structural lumber (thicker than 2") when graded according to the current Standard Grading Rules for Canadian Lumber. About 5% of the other structural lumber and boards were downgraded due to borer damage in the first year post-fire; such degrading due to borer damage was negligible in the second year post-fire;

4. In both years, checking damage downgraded more structural lumber and boards than woodborer damage did; downgrading due to checking highest in the severely burned timber.

Sunil Ranasinghe & Tom Hutchison

Pheromone trap results in the southwest 3 & 4 areas

Spruce budworm pheromone trap counts in the Woodlands Area indicate there is a low chance of an infestation developing in 2006. This is not unexpected. As 2005 is an odd year, the 2-year cycle budworm moth catch was very low. In 2006, the trap catch will likely increase.

There were no gypsy moths caught this year in any traps in either Area.

Two mountain pine beetle pheromone bait sites that have not recorded an attack previously were hit this year. One site at Rock Lake recorded 7 hits on one of the three baited trees. One tree of the three baited trees at Mary Gregg Lake was hit once. No other attacked trees were detected at either site.

Erica Lee

Stakeholders unite to engage youth about beetles

Alberta's Mountain Pine Beetle Strategic Direction Council is comprised of representatives from Alberta Sustainable Resource Development, Alberta Community Development, Parks Canada, Natural Resources Canada's Canadian Forest Service and forest industry.

The Council's Communications Committee is working to coordinate a program to promote awareness and understanding of mountain pine beetle (MPB) management and forest health in Alberta.

In 2005, the Committee partnered with Inside Education to engage teachers and students with the issue of MPB in Alberta. Inside Education included MPB related messaging into its professional development programs for teachers, the Adopt-a-Classroom program for students of all ages, and the Jumpingpound and Des Crossly demonstration forest education programs.

Currently, the Communications Committee is working with Inside Education to develop a junior high school science teacher's resource manual. This should be available in the spring of 2006.

For more information, please visit Inside Education's web site at: http://www.insideeducation.ca or email them at info@insideeducation.ca

Christine Kominek

Aerial survey upgrade

With all the new technology in this world, it was only a matter of time until someone came up with another application for forest health operations. Bye-bye paper maps, hello digital sketch mapping. A tablet person computer and Arcmap were used for all of the aerial surveys in the Northwest Region. This method of digital data collection was used to record the extent and severity of spruce budworm defoliation, aspen defoliation as well as the locations of red-attacked mountain pine beetle trees.

"Bye-bye paper maps, hello digital sketch mapping."

Basically, a person uploads orthographic map sheets of the survey area onto the computer and the aerial observer uses the features on these sheets to reference and record defoliation patterns and attributes onto the screen using a screen touch pen. A separate GPS receiver/transmitter placed at the front of the aircraft sends signals to the computer, which continually records a present location as well as flight paths. A symbol is shown on the screen that indicates the aircraft's position in relation to the ground and continually updates the position as the aircraft moves.

The system worked fairly well throughout all of the surveys and will be used again in upcoming years.

Mike Maximchuk

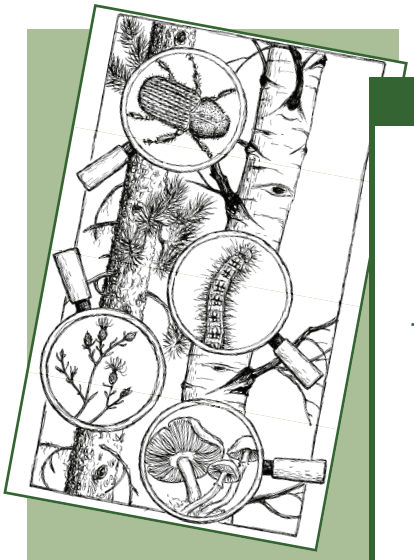
Can beetle management and caribou coexist?

In Edmonton on January 27, 2006, Sustainable Resource Development will be holding a workshop to increase awareness and understanding of the issues around mountain pine beetle (MPB) management in caribou habitats. The workshop is intended for land, resource and wildlife managers and planners.

Topics will include MPB biology, conditions and impacts; caribou biology and issues; and integration of MPB management and caribou conservation.

The workshop venue has yet to be confirmed. For more information, please contact fh.info@gov.ab.ca.

Christine Kominek



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Bugs & Diseases informs forestry-related personnel about current forest health issues. Articles are welcome. Submission deadline is the 15th of the month before publication.

Blew them all down

Sung to the tune of the traditional sea shanty - "Blow the Man Down".
To hear the melody, visit http://www.geocities.com/captcutlass/mu/so4.html

Blew them all down, that's right. Blew them all down.
Way! Hey! Blew them all down.
We've got spruce, we've got aspen all piled on the ground.
A big wind came and blew them all down.

Now there's hectares and hectares of trees laying down.
Way! Hey! Blew them all down.
Will they be all attractive to bugs all around?
A big wind came and blew them all down

Will they lay there to rot or be got when they're sound?
Way! Hey! Blew them all down.
Become good lumber in which nails we can pound?
A big wind came and blew them all down.

Will they make us good firewood, if they're up off the duff?
Way! Hey! Blew them all down.
Keep us warm in the winter, when gas bills get tough.
A big wind came and blew them all down.

Did they make any noise as they fell to the floor?
Way! Hey! Blew them all down.
Has anyone asked that there question before?
A big wind came and blew them all down.

Blew them all down, that's right. Blew them all down.
Way! Hey! Blew them all down.
We've got spruce, we've got aspen all piled on the ground?
A big wind came and blew them all down.

Tom Hutchison