

B

ugs & Diseases



April 1999

info note

1999 NWB War on Budworm

Within the Northwest Boreal (NWB) Region, an estimated 57 000 hectares of pure white spruce and mixed wood stands have been targeted for spraying in 1999. Areas north of the Paddle Prairie Metis Settlement, along the Chinchaga River, along west and east Sousa Creeks and near Zama City will be sprayed. Most of these areas will be sprayed with *Bacillus thuringiensis*, B.t. formulations. The areas near Zama City will be sprayed with either B.t. or MIMIC®, a chemical insecticide that works by disrupting the budworm larval developmental system to prevent the insect from molting.

Rising sbw population

This year's targeted spray area is significantly larger than the 8800 hectares sprayed in 1998. This is due to the significant rise in spruce budworm (sbw) populations within the area. The defoliated area recorded in 1998 (82 265 hectares) was more than double the area recorded in 1997 (33 146 hectares). A mild winter followed by an unusually warm, dry spring and summer enhanced larval survival and development.

New research

Many of the currently defoliated areas targeted for spraying in 1999 have been sprayed in previous years. Although insecticide spraying is tremendously beneficial in comparison to the costs, repeated spraying of an area reflects the importance of finding new methods of controlling outbreak populations without the dependence on insecticides. Spraying insecticides does not change any of the fundamentals of a stand that may have contributed to the initial build up of populations. Therefore, without other strategies, a forest manager should be prepared to continue these spray programs throughout the outbreak phase of a budworm population cycle.

As reported in a previous *Bugs & Diseases* issue, LFS, High Level Forest Products Ltd. and the Canadian Forest Service are looking at the potential for a "non-chemical" method of reducing budworm populations and their impacts on the forest resource. This project, near Zama City, involves silvicultural treatments of budworm host stands as a means of providing **long-term** protection. Currently, the various treatments have been implemented and a number of responses are being



assessed, most notably budworm population densities. For further information, contact myself (780-624-6569), Barry Gladders at High Level Forest Products Ltd (780-926-2989) or Dr. Jan Volney at the Canadian Forest Service (780-435-7210). ■

*Mike Maximchuk
Northwest Boreal*

SBW Virus-New Hope

As part of the 1999 spruce budworm (SBW) spray program in the Northwest Boreal Region, a field trial will be conducted to determine the potential of a new biological insecticide. This new spray agent is a granulovirus, a naturally occurring pathogen found only in spruce budworm (*Choristoneura fumiferana*) populations.

Virus specifics

Similar to B.t.-based products, the granulovirus becomes active after the budworm larva ingests the virus. However, there are several advantages of using the granulovirus over traditional B.t. products. The virus works only on spruce budworm populations and will therefore have no impact on other non-target caterpillar species. Also, the granulovirus is applied at 1.0 litres per hectare. This is in contrast to the 2.0 to 2.4 litres per hectare with traditional B.t. products. Therefore, there is a tremendous cost reduction as a larger area can be treated per aircraft load and the number of aircraft loads is significantly reduced. Finally, only one application of the product is needed to achieve significant reductions in budworm populations in comparison to the two applications with B.t.

The field trial will be conducted during late May-early June near the Chinchaga River, along highway #58 in the Upper Hay Forest Area. The virus will be sprayed over three different spray blocks of around 25 hectares. ■

*Mike Maximchuk
Northwest Boreal*

NEB 1999 Forest Health Projects

The Northeast Boreal (NEB) Region is currently preparing for the upcoming field season. The main forest health management activity will be to spray B.t. over approximately 15,000 hectares to control the spruce budworm infestations. The spruce budworm spray project will be conducted out of Fort McMurray, with John Augustyn of the Waterways Forest Area overseeing the project.

Pest monitoring

This year the following surveys are planned: pheromone monitoring surveys of spruce budworm moths and gypsy moths; second instar (L2) spruce budworm surveys; and aerial surveys of spruce budworm and forest tent caterpillar defoliations. Roger Brett of the Canadian Forest Service will be assisting with the spruce budworm and forest tent caterpillar defoliation aerial surveys.

The regional forest health working group met last year and has reported back that there are no issues currently on the table for discussion. Regional internal training or workshop requirements will be assessed this year. ■

*Sarah Schwartz
Northeast Boreal*

MPB in Willmore

Monitoring for mountain pine beetle (MPB) in Willmore Wilderness Park will be increased in the 1999 season. Two aerial surveys will be carried out: one in spring and the other in fall. Ground surveys will also be completed, if needed. Pheromone baits will be set up and monitored again, as well.

Monitoring will also be extended outside of the Willmore to determine if there is a surviving MPB population outside of the park. In co-operation with Weldwood of Canada Ltd., baits will be set up in blocks scheduled for harvesting in the fall. The plots will be monitored throughout the summer and, if needed, sanitization action will be taken. ▣

*Erica Lee
Northern East Slopes*

Training in PBP

Parkland, Bow, and Prairie (PBP) regions held a successful weed workshop in February, and an insect and disease (I&D) workshop in March. Employees from industry, LFS, Natural Resource Services (NRS), Parks, Municipal Districts (MD) and private consultants participated in these workshops.

If we do not have the same stressed summer due to high fire hazard like last year, we plan to do field tours for weeds, and I&D. We are also planning a short training course for Rapattack and Helitac members with our Fire Centres, so they can assist with aerial detection for forest pests while conducting routine flying. ▣

*Eva Zidek
Parkland, Bow, Prairie*

Bugs & Diseases

Vol. 10 No. 1

info note



Published triannually (Apr., Aug., Dec.) by the Forest Health Branch, Forest Protection Division, Land and Forest Service (LFS) Alberta Environmental Protection
Tel: (780) 422-6807; Fax: (780) 427-0292

Editor: Christine Kominek
Assistant Editor: Sunil Ranasinghe
Technical Support: Eileen George

Bugs & Diseases informs LFS, 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.*

© 1999 Alberta Environmental Protection
Please contact editor before citing an article.

Wood Borers Study

In the Chip Lake fire-burned area, Land and Forest Service and Weyerhaeuser Canada Ltd. will set up study plots to monitor sawyer beetles and other beetle populations attacking trees in the burned area. The beetle damage caused to the wood and the resulting grade will be studied.

Plot setup

The plots will be set up based on the following levels of burn: severely scorched with dry bark; scorched throughout with no sign of vigor but still has white bark; root or root collar damage, but tree is alive and likely to live for at least a year; and no damage. The plots will be monitored for two and a half years. Three to four trees from each plot will be cut, processed, and graded in the

spring and fall. This study will provide information about what to expect in the seasons following a fire and help to develop management strategies. ▣

*Erica Lee
Northern East Slopes*

Pamphlet of Woodborers

Forest Health Branch will soon publish a pamphlet on woodborers in Alberta. Dr. Herb Cerezke is the consultant for this project. This pamphlet will include the biology as well as management of important woodborer species in the province. This is a timely publication appearing in the wake of the large tracts of fire-killed timber resulting from the wildfires in 1998. Most of this timber is prone to woodborer infestation, especially to the whitespotted sawyer beetle. ▣

*Sunil Ranasinghe
Forest Health Branch*

Forest Health in PBP

The Parkland, Bow and Prairie (PBP) regions' weed management program for 1999 includes surveying in each forest area, as well as some control with spraying. This year, most of the forest areas will continue their inventory and treatment programs that began in 1998.

Our Insect and Disease (I&D) programs are focused on a proactive approach to identify I&D issues in our Region. We have planned field trials on dwarf mistletoe, Armillaria root disease and Warren root collar weevil. These trials will be incorporated into the timber management plans.

PBP regions will participate in the pheromone monitoring programs for mountain pine beetle (MPB) at 41 sites; spruce budworm at 12 sites; and gypsy moth at 17 sites. Aerial surveys and ground checks are planned for the areas where MPB was reported in 1998 as well as for the BC/Banff boundary. The same is planned for areas with reports of forest tent caterpillar and Bruce spanworm occurrence in 1998.

The North American Weed Management Association invited us to a conference, tour and trade show called "Breaking Down The Borders", Aug. 9-12, 1999 in Lethbridge. If you are interested in the conference, please phone Ali Shaffeeq, 780-422-4909. ▣

*Eva Zidek
Parkland, Bow, Prairie*

NWB Regional IPM Working Group

Over the last year, members of the Northwest Boreal Regional IPM Working Group have been working in collaboration with the Canadian Forest Service on the development of a forest health monitoring system. The main objectives of this system are to take a "proactive" approach to pest management and determine pest impacts on growth and yield. The Canadian Forest Service has taken the lead developmental role and has completed an initial proposal. Included in this proposal is an executive summary of the project, an IPM Survey manual, an evaluation of existing PSP distributions, and a budget.

Now, organizations within the working group must decide on their participation in the implementation of the monitoring system. This will be a long-term project and each

organization will have to commit to long-term participation to make this project a success. For further information, please contact myself (780-624-6569), Steve Luchkow (780-624-7427) at DMI or Dr. Jan Volney (780-435-7210) at CFS. ▣

*Mike Maximchuk
Northwest Boreal*

NES Weed Program

The Northern East Slopes will be involved in a weed awareness and control program again in the 1999 season. Each forest area will have a seasonal Weed Technician who is responsible for inventorying the forest area. The Weed Techs work closely with the Municipal District and County personnel in the area to cover as much ground as possible. NES will also develop a program for controlling the weeds found on Crown land. ▣

*Erica Lee
Northern East Slopes*

Pheromones in NWB

In the upcoming 1999 field season, pheromone traps will once again be used to monitor a variety of pest populations within the region. Forest tent caterpillar traps will be placed in the central and southern parts of the region where higher populations exist. Our aim for the future is to relate the current year's forest tent caterpillar moth catches to the following year's defoliation, although more data will be needed to make accurate predictions.

Search for gypsy moth

Gypsy moth traps will be placed throughout the region to determine the presence of this

destructive defoliator. No gypsy moths have been caught in the past years within the region.

Budworm monitoring

The number of spruce budworm pheromone traps placed in the region will increase significantly this season. Along with the budworm traps placed by LFS, a number of forest companies will be contributing by placing traps in order to better our budworm monitoring system. Canadian Forest Products Ltd., DMI-Brewster Lumber Division, High Level Forest Products, Buchanan Lumber Ltd., and Manning Diversified Forest Products will each be placing two traps at twelve locations within their respective areas. ▣

*Mike Underschultz
Northwest Boreal*

Outbreak Warning

The Alberta Forest Pest Outbreak Warning System is forecasting a year of forest insect outbreaks including spruce budworm in boreal regions, spruce beetle and whitespotted sawyer beetle in and around last year's burnt areas, and forest tent caterpillar around Peace River. Populations of mountain pine beetle along the foothills and other bark beetles in the burnt areas are also rising.

Warm breeding grounds

We just experienced one of the warmest winters in the last several decades. If you look back to 1998, Alberta had a mild winter, a warm and dry spring, and a hot and dry summer. On top of these weather phenomena, we had large spring fires that

provided excellent breeding habitat for many insects.

Anomalies of the length of pest life cycles were reported in Alberta and BC. For example, in 1998-1999, spruce beetle and whitespotted sawyer beetle (two beetle species that normally take two years to complete their life cycles, i.e., spending two winters before emerging as adult beetle) are completing their life cycles in one year. BC reported that some mountain pine beetles are completing their development within the same growing season in 1998. Shorter life cycle means that pest populations can build up much faster and likely healthier than normal years. Fasten your seat belt, we are heading for a rough ride. ■

Hideji Ono
Forest Health Branch

Forest Health Videos

After an agonizing wait for their completion, the videos under the "Forest Health Video Series" will be making their debut shortly. Free copies of the videos will be available for LFS regional/forest area office use.

After April 15, 1999, the videos on "Armillaria Root Disease" and on "Dwarf Mistletoe" can be ordered from:

FEESA, An Environmental Education Society, Suite 1100-10506 Jasper Ave., Edmonton, Alberta T5J 2W9 (Telephone: (780)421-1497; Facsimile: (780) 425-4506).

The video on "Juvenile Conifer Stand Health" is expected to be available shortly afterwards. The price of each video is \$19.95; cost of additional materials (colour plates, maps, etc), shipping and handling will be extra. Please add 7% GST to the final cost of the videos you order. Associates of FEESA are entitled to a 15 % discount on the cost of the videos.■

Sunil Ranasinghe
Forest Health Branch

Annual Report 1998

The "1998 Annual Report: Forest Health in Alberta" is with the printers and will be available for distribution shortly. Anyone who is not on our current distribution list and would like to receive a copy free of charge, should contact the Forest Health Branch Manager of the Forest Protection Division at (780) 427-6807; Facsimile: (780) 427-0292.■

Sunil Ranasinghe
Forest Health Branch

COMING UP NEXT ISSUE...

- ◆ Preliminary spray information
- ◆ Summary of spring/summer meetings
- ◆ Audio-visual update

Forest Health Officers:

NWB:
Mike Maximchuk
Peace River
780-624-6221
Mike.Maximchuk@gov.ab.ca

NEB:
Sarah Schwartz
Athabasca
780-675-8168
Sarah.Schwartz@gov.ab.ca

NES:
Erica Lee
Hinton
780-865-8267
Erica.Lee@gov.ab.ca

PBP:
Eva Zidek (Acting)
Calgary
403-297-8800
Eva.Zidek@gov.ab.ca