Bugs & Diseases

December 2001

info note

Mountain Pine Beetle Landscape Management Plan Update

Reducing high beetle hazard stands across the landscape is a complicated process. As we continue with our efforts, we are realizing that there are several benefits to removing these old pine stands.

In November, the steering committee consisting of representatives from Sustainable Resource Development (Fish & Wildlife, Forest Management Planning and Forest Protection Divisions), Alberta Conservation Association, Community Development (Provincial Parks), Banff National Park (wildlife and fire specialists), and Sunpine Forest Products met to look at options to treat the high hazard stands. The steering committee members evaluated each of the high hazard stands in the area and ranked the treatment of each stand based on priority from their own perspective. At the end of the day, it was apparent that with certain stands, multiple goals could be reached.

The plan is to now model the potential impact of the hazard reduction on visual quality; elk, bear and wolf habitat; and fire behaviour. The deadline for the initial modelling is December 21, 2001.

Dan Lux
Parkland, Bow and Prairie

Do Pests Hitch Rides on Trans-border Seedlings?

In the past, forest companies in Alberta have been importing conifer seedlings from British Columbia (B.C.) to meet their reforestation requirements. An estimated 20 million B.C.-produced conifer seedlings are annually imported. In addition, B.C. nurseries ship considerable amount of horticultural plant materials to Alberta.

Imported seedlings are produced in B.C. nurseries located in several biogeoclimatic zones varying from coastal to lower mainland and south interior to central interior zones. These seedlings may be subjected to different insect and disease pest complexes that may not be native to Alberta. Consequently, imported seedlings may serve as a source of some pest species not currently found in Alberta. Alternatively, some of the seemingly innocuous organisms may become virulent once they are introduced to different geographical zones.

The Forest Management Planning Branch recently commissioned a report entitled *"Survey of Potential Risks of Conifer Seedlings Grown at British Columbia Nurseries and Destined for Reforestation in Alberta."* This report, compiled by forest health consultant Dr. Herb Cerezke, identified several common insect and disease problems at nine B.C. nurseries growing seedlings for Alberta. Some of these pests may not be able to get established in Alberta due to climatic limitations. However, other pest species such as soil-inhabiting weevils and the variegated cutworm can become pests in this province. It is not known for certain whether these potential pests are already present in Alberta in view of the increasing number of seedlings imported during the past decade. As well, the forest nursery pests in Alberta are relatively less known than those in B.C.

In any event, "due diligence" has to be exercised to ensure that all necessary precautions are taken to minimize the risk of pest introductions through imported forest nursery seedlings to the Green Area of Alberta.

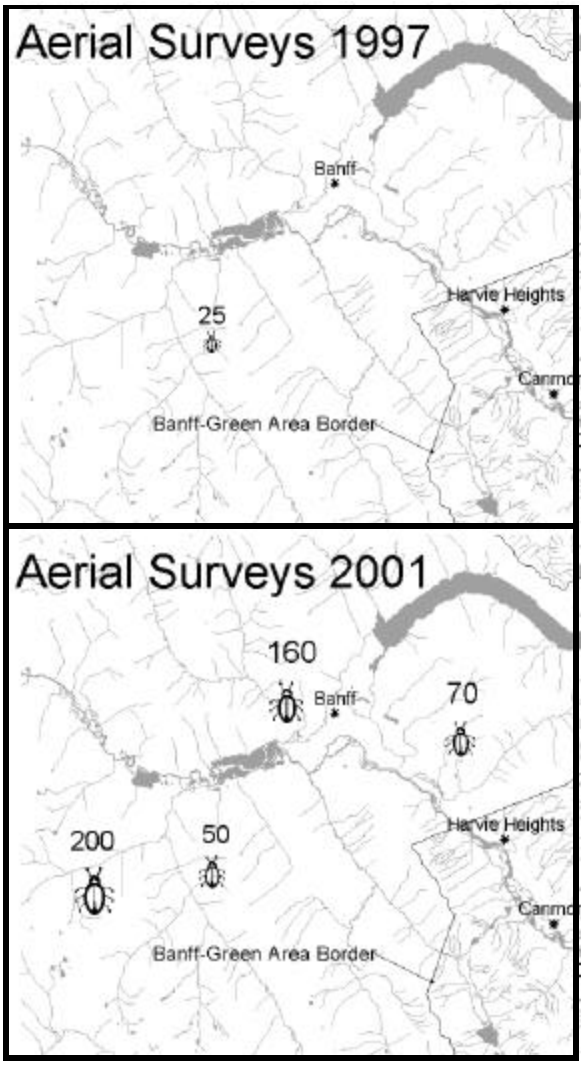
Sunil Ranasinghe
Forest Health Centre

Parkland, Bow and Prairie Region MPB Population Update

Aerial Surveys

No red trees attacked by mountain pine beetle (MPB) were found in the Green Area. In Banff National Park (BNP), however, the MPB population increased again this year. Recently identified were at least 70 possible MPB-attacked trees along the Fairholme Bench area that is adjacent to the Green Area Border along Highway 1 in the Bow Valley. Ground truthing is underway to confirm the damage agent. The Bench may be burned as part of the BNP's prescribed burning plan next spring.

As a precaution, a crew from the Calgary Fire Zone completed ground surveys near Harvey Heights. The crews did not find any beetle-attacked trees between Harvie Heights and the BNP border. The crew is now surveying within BNP from the border to Carrot Creek.



Comparison between the location and number of MPB-attacked trees in Banff National Park in 1997 vs. 2001.

Pheromone Surveys

Observed this summer was an increase in MPB attacks on pheromone-baited trees. The following table summarizes the results.

Forest Area	No. of Plots	No. of Plots Attacked in 2001	No. of Plots Attacked in 2000
Brazeau	2	0	0
Clearwater	4	1	0
Bow	1	0	*
Crowsnest	20	15	11

*Only one plot was established in the Bow Forest Area this summer, compared to 10 last year. The reason for the reduction of baited trees was to prevent the attraction of beetles to areas where aerial surveys have already identified a high population.

Bugs & Diseases *info note*

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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.

The MPB-attacked tree in the Clearwater Forest Area was at Thompson Creek, along the David Thompson Highway near the Banff/ Jasper National Park border. This is the first time a baited-tree has been attacked this far north in the Clearwater Forest Area. This tree will be revisited next May to observe any overwinter mortality.

In light of the beetle presence at Thompson Creek, an aerial survey of the David Thompson corridor through the Howse Pass into British Columbia was completed to look for a possible source of these beetles; no red trees were observed. The aerial survey of this area will be intensified in 2002.

Dan Lux
Parkland, Bow and Prairie

Aspen Defoliators Cut Swath of Biblical Proportion in the Northwest Boreal Region

A multitude of aspen defoliating larvae chewed their way through a large area of the Northwest Boreal Region this year. Most significant was the defoliation caused by the large aspen tortrix. An estimated 3,192,512 hectares of defoliation was recorded this year. Of this, 141,994 hectares were lightly defoliated, 3,044,776 hectares were moderately defoliated and 5,742 hectares were severely defoliated. The total defoliated area increased from last year (2,540,273 hectares), however, the intensity decreased as most defoliation was in the moderate category.

Mike Maximchuk
Northwest Boreal

Insect Management at the Alberta Tree Improvement & Seed Centre

Surveys to monitor insects attacking seeds and cones in established seed orchards have been ongoing since 1995. Annual surveys have been conducted at the Alberta Tree Improvement & Seed Centre (ATISC) near Smoky Lake with the objectives to: provide an inventory of the insect species causing damage to seeds and cones, provide information on their yearly abundance and provide estimates of the seed losses they cause. While most of the emphasis has been on pests associated with white spruce seed orchards, cones of other conifer species have also been monitored.

The highest levels of insect-caused seed losses have consistently occurred in white spruce and are attributed to mainly three insect species: spruce cone maggot, spruce seed moth and fir coneworm. Abundance of each species may vary widely from year to year and is partly dependent upon the size of the cone crop. In three white spruce seed orchards monitored over six years, the average annual seed losses over six years were 22%, 25%, and 36% respectively; losses in some years exceeded 70%. Of the three insect species, the spruce cone maggot causes most damage, with a single larva destroying about 60% of the seeds in a cone. This insect alone has infested as high as 76% of the cones.

Both the spruce cone maggot and the spruce seed moth attack young female conelets in the spring at about the time of pollination. The examination of conelet samples at this time for eggs and early instar larvae can establish levels of cone infestation and reliably predict the percentage of seed loss likely to occur in the mature cone crop. The timing of the sampling is sufficiently early in the spring to allow effective control applications during the current season if the threshold of acceptable seed loss is exceeded.

Herb Cerezke
Forest Health Consultant

Spruce Budworm Blues

Spruce budworm defoliation was once again significant in the Upper Hay Forest Area this year. An end to the current outbreak cycle is not foreseeable as of yet. The total area of defoliation increased this year from last, however, the final results are currently not available. Most significant was the visible defoliation observed in some of the areas sprayed with the biological insecticide Thuricide 48LV® (B.t.k.) in 1999. Defoliation was observed in the spray blocks located north of Paddle Prairie Metis Settlement, along the Chinchaga River and along East and West Sousa creeks. In contrast, the two areas sprayed with Mimic® in 1999 continue to be free of any significant defoliation.

From the results of this year's L2 survey, severe defoliation is expected within and north of the Paddle Prairie Metis Settlement, southwest of High Level, along the Chinchaga River, along the West Sousa Creek, along the Shekilie River, north of Zama City, in the Cameron Hills, and along the Hay River and all of its tributaries near Steen River. Also of interest from the results is the expected moderate to severe defoliation in the Hawk Hills. Defoliation has not been observed in this area since 1999 when apparently the cold, wet spring weather caused the population to collapse.

Mike Maximchuk
Northwest Boreal

Willmore Pine Beetle Population

During this year's aerial survey, approximately 100 red trees were identified in Willmore Wilderness Park. A preliminary ground survey determined that the trees had been attacked by the mountain pine beetle. These trees are located in the Meadowland Valley near the Jackpine River, west of Ptarmigan Lake. A ground probe survey will be conducted and the necessary control measures will be carried out before beetle flight in 2002.

Erica Mueller
Northern East Slopes

Fifth Annual IPM Committee Meeting

On October 22, 2001 the Integrated Pest Management (IPM) Committee met in Edmonton. In attendance were representatives from nine forest companies, the Canadian Forest Service, the University of Alberta, Grande Prairie Regional College, the City of Edmonton, the Alberta Forest Nursery Association, the Alberta Forest Products Association and Alberta Sustainable Resource Development. Topics of discussion included current forest health issues, updates on pest conditions and current and future research and initiatives. As well the terms of reference were reviewed and after some discussion it was decided that the IPM Committee will not be a voting committee due to the information/ discussion format of the meetings. The Annual IPM Committee Meeting will now be referred to as the Annual Provincial IPM Meeting. The next annual meeting is scheduled to be held in Edmonton in mid-October, 2002.

Linda Joy
Forest Health Centre

Excellent Turnout at the NEB Weed Co-operative

On October 10, 2001 the second meeting of the Northeast Boreal (NEB) Regional Co-operative Weed Management Working Group was held in Athabasca. As with the first meeting, there was excellent stakeholder turnout. The participants included representatives from the forest industry, oil/gas sector, government, special interest groups, local municipalities, metis settlements, transportation, and members of the local trapping community. The group will meet again on March 20, 2002.

In the interim, participants are working on developing the terms of reference for the group. Companies will also continue to develop their weed management plans for the 2002 season. The group has not commenced any co-operative initiatives yet, but opportunities for joint ventures are being actively explored.

Janet Kamelchuk
Northeast Boreal

IPM Pilot Project Near Completion in the NWB

Some members of the Northwest Boreal (NWB) Regional Integrated Pest Management (IPM) Working Group participated in a pilot project that involved the assessment of a forest health monitoring system developed for the group in1999 by the Canadian Forest Service. The objectives of the pilot project were to determine the time and resources needed to maintain the system on an annual basis, identify potential problems with the methodologies and ways to improve them, and to assess the value of the data collected. The intent is to use the results of the pilot

project to improve the monitoring system before implementing it in 2002. Involved in the pilot project were Alberta Sustainable Resource Development and the following companies: Alberta Plywood, Buchanan Lumber, Canadian Forest Products (Grande Prairie) and Daishowa-Marubeni International.

Two field assistants were employed by the working group from May to September to complete assessments of all surveys that form part of the monitoring system. In this pilot project five broad survey types were tested to collect information on 12 different forest insect and disease pests. The five broad survey types were regeneration surveys, permanent sample plot visitation surveys, aerial detection surveys, ground-truthing surveys and subterranean surveys.

A final report that is being developed will contain the results of the pilot project, suggestions for improvement, associated costs and recommendations for its operational implementation.

Mike Maximchuk
Northwest Boreal

Cross-country Pest Management Update

The Annual Forest Pest Management Forum was held in Ottawa on November 26 to 29. Provincial updates provided information on pest conditions and management practices across Canada.

National Pest Management Headlines

Ice storm damage triggers 19,000-hectare spruce beetle outbreak in Nova Scotia.

Experimental spray of a spruce budworm pheromone to disrupt mating conducted - results promising.

Operational spraying of Neemix (pesticide extracted from neem seed oil) conducted for balsam fir sawfly in Newfoundland and pine false webworm in Ontario costing $150-$200/hectare - results not available.

In British Columbia the mountain pine beetle has infested 5.7 million hectares (estimated $4.2 billion worth of timber). The annual cut was increased this year by 2.5 million cubic meters to salvage beetle-killed trees.

Spruce budworm is mainly a western problem now. Saskatchewan has the largest infested area in Canada, and the Maritime Provinces have none.

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