Bugs & Diseases

April 2003

info note

It's All Over...For This Year

The 2002 mountain pine beetle (MPB) control program in the Bow Valley is completed. In total 785 trees were felled and burned and 224 sanitation-logged near the Grassi Lakes trailhead. Provincial Fire Crews burned 739 trees while 46 were burned under contract. Alberta Community Development co-ordinated the sanitation harvest, which was completed at the end of March.

Thanks to all of the burning crews, SRD staff and Community Development for making the control effort a success. The Town of Canmore and private developers are continuing to control MPB-infested trees in Canmore. This program will be completed before June 2003.

Dan Lux

Spruce Budworm Impacts

The impacts of the current spruce budworm outbreak, which began in the Upper Hay Corporate Area in 1987, are becoming quite visible across the landscape. Areas that have sustained repeated years of severe defoliation are showing typical visual signs of impact, aside from the growth loss that is hidden within the tree rings.

From aerial and ground observations it appears that the various signs of damage tend to show up after a definite number of years of successive or near successive severe defoliation. Within the first four years of severe defoliation, there is little impact to a tree's appearance i.e., most of the new foliage is removed through budworm feeding but the tree retains its healthy appearance. From years five to seven, defoliation begins to alter the once healthy appearance. Branch mortality and top-kill become quite common, and in general the host stand begins to appear somewhat grey. As well, a small percentage of the understory trees within the stand may die due to stress caused by lack of foliage and competition with the dominant and co-dominant trees. Finally, after eight or more years of severe defoliation, host tree mortality becomes widespread

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throughout the understory and in some of the co-dominant and dominant trees.

These impacts are best exemplified by some of the white spruce stands along the Steen River. Severe defoliation within these stands has continued for 11 of the last 12 years. Within these stands, an estimated 30% of the white spruce trees have been killed.

What happens to a stand if the defoliation continues? What are the projected volume losses? Considering the size of the current outbreak in the Upper Hay Corpotate Area (95, 849 hectares) impacting over 14 million cubic meters of wood, it is important to get the answers to these questions.

To collect the data needed to address these questions, a network of 22 plots was established in 2001 in several locations in the Upper Hay Corporate Area. Data on tree vigour, defoliation severity estimates, and tree growth and yield will be collected each year on a number of trees in each plot. In 2003, the plan is to expand the plot network to provide further insight into budworm impacts within northern Alberta. ◘

Mike Maximchuk

Pest Forecast for 2003

The following forecast is based in part on Alberta Forest Pest Outbreak Warning System (AFPOWS) data collected in 2002. Please keep in mind that these predictions are likely scenarios of pest occurrences either based on data from a limited number of plots or on population trends observed in 2002.

Spruce Budworm

The spruce budworm infestations observed in 2002 along the Athabasca and Clearwater rivers are expected to continue in the Northeast Corporate Region; most of the defoliation would be severe. New budworm outbreaks are more likely to occur north of McMillan Lake and north of Fort McMurray. The risk of new outbreaks occurring in the Northwest Corporate Region is low except in the Upper Hay Corporate Area; in this corporate area, high outbreak risk is expected near Lawrence River, south of Tall Creek along the Wabasca River and near Zama City. In the Southwest Corporate Region no new spruce budworm outbreaks are expected in 2003. However, areas defoliated in 2002 at the west end of Upper Kananaskis Lake and Howse Pass are likely to have two-year cycle budworm and visible defoliation may not be seen in 2003.

Broadleaf Defoliators

The eastward movement of the large aspen tortrix (LAT) defoliation within the province is expected to continue. More aspen defoliation is expected in the Northeast Corporate Region. Based on the historical trends, the LAT defoliation in western Alberta should begin to decline in the near future. However, the forest tent caterpillar infestations in this area may increase if the LAT populations decline.

Mountain Pine Beetle

Mountain pine beetle infestation in Willmore Wilderness Park will continue at a relatively low level while the beetle population in Jasper National Park is expected to increase in 2003. However, beetles may only have limited success except in the south facing slopes of Jasper National Park. At the current rate of increase, pine beetle populations are expected to rise four to five-fold in Banff National Park. With the influx of beetles from Banff National Park, risk of outbreaks occurring in the Bow River Valley is very high; pockets of beetle-killed trees may occur in the Canmore area. Due to

the existence of current beetle infestations in British Columbia near the Alberta - British Columbia border, the Kootney Valley and the area between Ghost River Valley and Oldman River Valley in southern Alberta are at high risk of infestations. Pine beetle activity is expected to remain low in the Clearwater Corporate Area. ◘

Sunil Ranasinghe

Whitebark and Limber Pine In Peril

Parks Canada recently organized a workshop to focus on two tree species of concern in mountain parks; whitebark pine (*Pinus albicaulis*) and limber pine (*Pinus flexilis*). Sustainable Resource Development (SRD), Community Development, Canadian Forest Service, British Columbia Ministry of Forests, United States Department of Agriculture, and academia from Canada and the United States participated, and agreed to develop a common strategy to manage these two rare white pine species in western North America.

Since the introduction of white pine blister rust to North America in about 1900, the destructive disease has spread through the Pacific Northwest, British Columbia and Alberta killing white pines in its path. To make matters worse, recent mountain pine beetle outbreaks have been killing white pines that survived the white pine blister rust. In the United States the status of the whitebark and limber pine is threatened.

Currently, SRD does not have comprehensive inventory of either the disease or the white pines. This year in Alberta, SRD will survey to locate whitebark pine and assess their health condition outside of the national parks. If you have any information regarding the whitebark pine or white pine blister rust, please contact your local Forest Health Officer. ◘

Hideji Ono

Invasive Plant Awareness Workshops

A series of invasive plant awareness workshops will be held this spring in the Northwest Corporate Region. The focus of these workshops will be to increase awareness of common invasive plant species in the area and to promote preventative strategies to reduce their establishment and spread. The workshops will be held in Grande Prairie (May 5th), Manning (May 6th) and Peace River (May 7th). ◘

Mike Maximchuk

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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.

Research Planned

The Southern Rockies and Clearwater Corporate Areas are planning several research projects this summer. Mountain pine beetle, root disease, and ungulate browsing are the subjects of these projects.

Mountain Pine Beetle - In co-operation with Banff National Park, SRD plans to evaluate a thermal heat model to predict where pine beetles are likely to be successful. The model was first developed by Darryl Zell of Banff National Park.

Root Disease - Plans are being developed for two separate stumping trials. The proposals are in the early stages, but co-operative ventures with Sunpine, Hanson Forest Products and ex-4 Tree Rangers are underway. Hopefully, research projects will start this fall.

Ungulate Browsing - Sustainable Resource Development will continue to work with Rocky Wood Preservers to evaluate the effect of ungulate browsing on pine seedling growth. ◘

Dan Lux

Invasive Plants Going Digital

The Clearwater Corporate Area is working with members of the local Co-operative Invasive Plant Management Group to share invasive plant inventories. The process involves using hand-held Palm Pilots with a standard inventory form. The information from the Palm Pilots is downloaded to a common database that is accessible to all participating members of the management group.

John Bruce with SRD in Drayton Valley is working on the form and is hoping to use the digital database this summer. ◘

Dan Lux

Broadleaf Defoliator Rap

Looking like a cataclysm,
Feeding with fanaticism,
Laying bare, laying waste,
Gorging with unbridled haste.
Stripping down to the ground,
All that's verdant, tasty, and lush.
That's our way, everyday,
Gnawing, growing, moving on,
All in a massive rush.
But we ain't evil, scheming, diabolical,
We're natural, regular, cyclical, typical.
So don't be dissin' us,
For soon you'd be missing us.
Trees all defoliated soon get refoliated.
The crap we drop down,
Gives nutrients to the ground.
So maybe some growth we might cause to stall,
But we're engines for forest recycling y'all. ◘

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