Bugs & Diseases

April 2005

info note

Crowsnest Pass beetles

Work has begun to survey and control the newest mountain pine beetle infestation in Southern Alberta. Two patches of red-attacked trees were detected last fall in the Crowsnest Pass area, near Star Creek, east of Tent Mountain; they will be ground surveyed and controlled in March and April.

British Columbia pine forests are heavily infested in the areas adjacent to Alberta; the Sparwood area has experienced a 10-fold increase in beetle numbers over the last two years for example.

We have already spoken with the Municipal District Council and local media and will begin a more comprehensive communications strategy this summer. In addition, we will intensify our aerial surveys in the area this fall.

Dan Lux

Adelgids 101

With the arrival of spring I am reminded of the numerous phone calls I will, no doubt, receive from concerned people throughout the Northeast Region. Usually the queries go something like this:

- What causes those cone-like (or pineapple-like) thingies on my spruce trees?
- Will they kill the tree?
- How do I get rid of them?

Newly formed gall on a spruce branch caused by the eastern spruce gall adelgid.

These are good questions, which I am more than willing to answer. This year, however, I will be pro-active and attempt to answer them in this newsletter:

What causes those cone-like (or pineapple like) thingies on my spruce trees?

The cone-like or pineapple like growths (galls) found on spruce trees are caused

by relatives of aphids called "adelgids". There are several species of adelgids and the one we find in our region is the Eastern spruce gall adelgid (*Adelges abietis*). Adelgids have, for lack of a better word, "cool" lifecycles. I'll attempt an abbreviated version here.

Adelgids over-winter as immature female nymphs called fundatrices. In the spring the fundatrices come out of dormancy and mature until about mid-may. As they mature they secrete waxy filaments under which they lay eggs produced asexually. About two weeks later these eggs hatch into little yellowish nymphs called gallicolae migrans. These migrate (hence their name) to the base of newly flushed needle growth. There the gallicolae suck sap from the tree and release a toxin that causes the trees tissues to swell around them. This swelling forms the characteristic galls. Within these galls the nymphs continue to develop. Around late July or early August the galls dry out and mature nymphs emerge. They then crawl to nearby needles and molt into the winged female stage of their lifecycle (the sexuparae). In September, the sexuparae return to the trees and again lays eggs. A few weeks later these eggs hatch into male and female sexuales (a wingless form in the insects lifecycle). The sexuales feed for a short time and then move toward the trunk of the tree to mate. After mating the females lay eggs at the bases of newly formed buds, then die. These eggs hatch into fundatrices, which then overwinter.

Will they kill my trees?

The answer to this is no (or not normally). The damage caused by adelgids is primarily an aesthetic concern. Depending upon the level of infestation, one might see sparsely filled or dead branches. As the adelgids attack new growth, heavily infested trees will perform poorly and may need periodic protection. In most cases, if a tree is heavily attacked it is a good indication that something else is wrong with it and it probably requires a lot of tender loving care.

How do I get rid of them?

The short answer to this is - you cannot get rid of them completely. Adelgids are everywhere spruces are. You may be able to control them somewhat, but they will always be around to infest your spruce. Control options can include both cultural and chemical methods. On smaller trees the galls can be picked off while they are still green, then burned. Chemically, various contact insecticides (or soapy water) can be used at certain stages of this insect's lifecycle. In the spring, one can target mature nymphs before they lay their eggs. Typically, this would be timed to coincide with the trees bud break. In the fall, chemical applications can be used to target the over-wintering stage. Care has to be taken to ensure coverage on all the inner branches at this time of year.

In my personal opinion chemical pesticides are overused, and I wouldn't endorse their use for anything but extreme cases of adelgid infestations. If you can live with the sight of a few galls on your trees, why not let them be? They are after all, pretty cool insects. ◘

Tom Hutchison

Was it cold enough?

Was it cold enough to kill the mountain pine beetles this winter? There were a few days of cold weather, but it won't be until May before we can really tell. Over-wintering surveys will be conducted in May to determine beetle survival and to assess how intensive the beetle flight will be this summer. Stay Tuned. ◘

Dan Lux

Invasive plant priorities

The 2005 invasive plant management program is underway in the Clearwater and Southern Rockies forest areas. Once again this year we have established survey and control priorities for the two areas. The priorities are:

1. Survey and control invasive plants in co-operative management areas where stakeholder participation is the greatest.

Areas Identified:

- Follow-up on Owl River Road (Clearwater)
- Rig Street Area (Clearwater)
- Atlas Road (Southern Rockies)

2. Survey and control invasive plants on recreation areas on SRD lands – emphasis on containment and staging areas.

Areas Identified:

- Hummingbird/Onion Lake Trails (Clearwater)
- Ya Ha Tinda (Clearwater)
- Ghost/Waiporous (Southern Rockies)
- Upper trails leading to BC in the Castle area (Southern Rockies)
- Beaver Mines trail system (Southern Rockies)

In addition to these priorities, we will help the Forest Protection Division manage invasive plants in fire suppression areas in the south.

We are once again focusing on co-operative management of our problem. If any land manager wants to initiate a co-operative venture, please call Dan Lux at 403-845-8272.

Dan Lux

Bugs & Diseases *info note*

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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.

Canmore MPB update

The control program in Canmore is almost completed. This summer we felled and burned 346 infested trees. This is up slightly from the 254 trees burned last year, but down from the over 1000 trees burned in 2002-3. The beetles are spread throughout the valley on both sides of the Bow River. Over 1524 hectares were surveyed from the Banff National Park border to Pigeon Mountain.

Crew burning MPB-infested tree on the stump.

We are starting to see beetles on Pigeon Mountain, which is the farthest east we have seen them in the Valley. There is a concern that they will continue spreading east over the Skoogan Pass into the Kananaskis Valley. Next summer we will intensify our aerial and ground surveys in the area.

Dan Lux

Yellowheaded spruce sawfly control

Spinosad (Entrust 80W Naturalyte®) is a biorational insecticide derived by fermentation of a soil-borne organism. This insecticide is currently registered in the U.S. for controlling several pests including the yellowheaded spruce sawfly (YHSS).

In the past few years, YHSS has caused tree mortality in white spruce plantations growing on land reclaimed by the oil and gas industry.

Ed Kettela, a research scientist at the Atlantic Forestry Centre of Canadian Forest Service, is planning to field test the efficacy of this product to support its registration in Canada for aerial applications to control the YHSS. The field test is being planned in collaboration with SRD and the oil companies Suncor and Syncrude, and will be carried out this summer near Ft. McMurray.

Sunil Ranasinghe

Welcome back Marian

Marian Jones has once again joined our team in the Southern Rockies and Clearwater forest areas. Marian started with us in January after working for the Alberta Invasive Plant Council over the winter. Marian will oversee the spray and survey operations in the south and make sure that we adhere to our priorities. Marian will also be heavily involved in invasive plant education and awareness. If you handle invasives in the south, expect a call from Marian.

Dan Lux

Cold injury blues

There's snow on the ground,
But my leaves are still on.
I had hoped to shed them,
They should now be gone.

The cause for all this,
Weren't my poor decisions.
The cold came so fast,
I couldn't form the abscissions.

Now my cambium's frozen,
My xylem has ice.
I don't know what will happen
But I'm sure it won't be nice.

When the daylight is longer
With spring's warm arrival
I hope that last fall
Won't affect my survival.

Tom Hutchison

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