

# PesTopics: Bark Beetles

## ***Prevention and Early Detection Are Key***

There are many bark beetle species native to the forests of British Columbia, but only a few species are tree-killing pests. In the Okanagan, western pine beetle (*Dendroctonus brevicomis*) is the most common pest in urban areas, with occasional outbreaks of Douglas-fir beetle (*D. pseudotsugae*), or mountain pine beetle (*D. ponderosae*).

Tree mortality can occur rapidly, so prevention of attack and early detection are key to minimizing damage.

## ***Identification and Life Cycle***

Bark beetles are small (usually less than 6-7 mm long) black or brown beetles that bore into the bark of trees and construct galleries (Fig. 1) where they lay their eggs. The larvae are small, creamy white and grublike.



**Fig. 1. Western pine beetle galleries**

Host tree preferences vary for each species of bark beetle, although they all prefer to attack large, mature trees. Western pine beetle (WPB) only attacks ponderosa pine in this area, whereas Douglas-fir beetle (DFB) infests Douglas-fir. Mountain pine beetle (MPB) will attack ponderosa, lodgepole, and Scotch pine.

DFB and MPB normally have a one-year life cycle, emerging in the late spring / early summer. WPB can have multiple generations in a year, with several emergence peaks over the course of a season.

Once they have found a suitable host, beetles begin emitting an “aggregation pheromone”, a chemical scent that attracts other beetles in order to mass-attack a tree and overcome the tree’s natural defences.

## ***Management:***

Ensure that you have properly identified the problem with the help of a tree or pest management professional. Some types of bark beetles or wood borers do not kill living trees, but only attack once a tree is already dead or dying. Bark beetles can attack apparently healthy trees, but usually prefer weakened trees. Look for evidence of other factors that might predispose trees to attack, such as root damage, disease, drought, or

heavy pruning. Keeping trees healthy through good fertility, watering and proper tree care practices will help increase their resistance to attack, particularly during summer droughts when most beetle flight occurs.

The primary method of bark beetle control is sanitation: brood-containing trees are removed and destroyed or treated with a registered insecticide<sup>1</sup>. Infested trees should not be used as firewood, transported, or stored for any length of time unless they are first debarked to destroy the brood. Ideally, the infested bark should be chipped, burned or buried to ensure adults and larvae are killed.

Bark beetle damage often is not detected until infested trees start to die and turn yellow or red. By the time damage is visible, the beetles may have already moved on. Therefore it is critical to find the attacked trees that still contain live brood. Look for trees in the nearby area that have symptoms of fresh attack. The most common symptoms are “pitch tubes” (small pitch blisters oozing out of beetle entrance holes), tiny entrance holes in the bark, and/or frass (boring dust) on the bark or at the tree base. An axe may be used to confirm the presence of live beetles within or just under the bark.

In forested areas, thinning of dense stands can help to reduce the susceptibility to infestation and help to prevent outbreaks for the WPB and MPB.

For more information:

Western pine beetle:

[http://www.na.fs.fed.us/spfo/pubs/fidls/we\\_pine\\_beetle/wpb.htm](http://www.na.fs.fed.us/spfo/pubs/fidls/we_pine_beetle/wpb.htm)  
<http://www.barkbeetles.org/western/WPBFIDL1.htm>

Douglas-fir beetle:

<http://www.barkbeetles.org/douglasfir/dfir.html>

Mountain pine beetle:

[http://www.for.gov.bc.ca/hfp/mountain\\_pine\\_beetle/](http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/)  
[http://www.pfc.forestry.ca/entomology/mpb/index\\_e.html](http://www.pfc.forestry.ca/entomology/mpb/index_e.html)

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<sup>1</sup> Check with a pest management professional prior to use of an insecticide to ensure compliance with all applicable legislation.