

# The cycles of nature: a new viewpoint.



The health of our forests is affected by many things, including drought, fire and insect infestations. Right now, impacts of the worst insect epidemic in British Columbia's history can be seen across the province's Interior region. By 2005 the mountain pine beetle, a natural part of this ecosystem, had infested over seven million hectares of our Interior lodgepole pine forests. Even though this is a natural cycle, we now must give nature some help to speed the process of forest renewal that will make these vistas green again.

The first stage of mountain pine beetle infestation is called **green attack**. The beetles live under the bark and lay their eggs.

Stage two of the infestation, called **red attack**, happens one year later. The beetles have cut off the flow of water and nutrients to the trees, causing them to die and the needles to turn red.

When the needles fall from the trees in the second year of the infestation, the forest is under **grey attack**.

Harvesting the dead trees quickly recovers the value of the timber, removes fuel for wildfires, and speeds regeneration.

Seedlings are planted, beginning the renewal process and continuing the cycle of nature.



Map: Natural Resources Canada, (February 2005)  
 Area affected by mountain pine beetle  
 Areas of major outbreak

**Q** What areas are affected by the mountain pine beetle infestation?

**A** This map shows the extent of the infestation in B.C.'s Interior in 2005. There are seven million hectares of affected forests – an area the size of New Brunswick. Forestland covers two-thirds of our province, and 25 per cent is lodgepole pine forest, which is vulnerable to mountain pine beetle attack. Many Interior communities are impacted, including the livelihoods of some 25,000 families.

**Q** How did this become such a devastating epidemic?

**A** Mountain pine beetles prefer mature lodgepole pine trees, typically 80 years old or more. Under normal conditions the beetles help weed out the older, weaker trees so forests can regenerate faster. But recent conditions have been anything but normal. Mature lodgepole pine in B.C. has tripled since 90 years ago, in part due to successful fire fighting, so our forests are more susceptible. A decade of mild winters have allowed an unusually large percentage of beetle larvae to survive – with mortality rates

as low as 10 per cent instead of the usual 80 per cent. And recent hot, dry summers have weakened trees through



drought stress and made them less resistant to attack. All this has created ideal conditions for the epidemic to take hold.

**Q** Can't the infestation be controlled?

**A** Normally, nature can keep the mountain pine beetle under control, mainly by killing off larvae in cold winter weather, and through natural predators like woodpeckers. When infestations do occur, we can use management strategies such as aerial surveys to find trouble spots, removing patches of infested trees, small or large-scale burns, and targeted commercial harvesting. While these methods can help control the spread of smaller outbreaks, they can't stop a massive epidemic like this one.

**Q** What can be done now?

**A** Forest management emphasis has now shifted from control of the mountain pine beetle to recovering log value while the timber is still salvageable. The more quickly the dead trees are removed, the better the quality of the wood, and the faster the forest will regenerate through re-planting. Commercial harvesting of dead trees also reduces the risk of future large scale wildfires. The seedlings planted, and those found naturally on the forest floor, will soon take root and grow, creating the beginnings of new, healthy forests. In B.C.'s provincial parks and protected

areas, park managers will create fuel breaks to reduce the wildfire risk in areas that people frequent, and will work to restore habitats with prescribed burning where needed.

**Q** Can future epidemics be prevented?

**A** The risk of future epidemics can be reduced through such things as a mix of tree species and ages, shortened harvest rotation time, and rapid response to new infestations to keep them under control. While management techniques can help, nature will always play a critical role in balancing the forest ecosystem.



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