



.: LIVING WITH MOUNTAIN PINE BEETLE IN ALBERTA:.

It is possible the mountain pine beetle will cause economic loss in Alberta both in the foothills and the boreal forest. The Alberta Government seems determined to stop the spread, but trying to fight nature may do more harm than good. Can we learn from BC's experience and work with nature to manage the pine beetle in a way that is better for our forests, forest industry and forest dependent communities?

What is the mountain pine beetle?

The pine beetle is a naturally occurring bark beetle – a rice-sized insect that attacks and kills mature pine trees by boring



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through the bark and mining the phloem (the living, transportation layer of the tree). They also carry a fungus that inhibits a tree's natural defences against beetle attacks and causes a blue stain in the wood.

What is causing the spread?

Normally pine beetle is uncommon in Alberta due to cold winters that kill them. A recent run of warmer winters has led to a great increase in pine beetles in BC, where they are naturally more common, and they are gradually moving into Alberta. Also, the combination of widespread forest fires in the late 1800s and early 1900s (perhaps associated with settlement) and the more recent practice of putting out fires that would have created a more varied composition of tree ages on the landscape has resulted in an older, denser and more even aged pine forest, which facilitates the beetle's rapid spread. Hot, dry summers also stress the pine trees and leave them more susceptible.

To see how they have spread in BC from 1959 to 2002 see link below.¹

¹ <http://www.pfc.forestry.ca/entomology/mpb/historical/images/mpb640.gif> - Natural Resources Canada

Living with Pine Beetle:

- **Value-added industry:** Instead of investing in increasing logging capacity and overcutting to reduce the economic loss, invest in value-added projects to enable the maintenance of employment and profits by getting more value for less wood in the future.
- **Log in areas that are not of High Conservation Value:** Intact areas, riparian areas, habitat for caribou, grizzly bears etc. are more valuable left alone than for short-term profits.
- **Set aside more areas protected from industrial use:** Since all the wood cannot possibly be logged, set aside the best areas for parks, wildlife and tourism to diversify and bolster future local economies.
- **Only log pine areas with no understory:** Forest regeneration will take place more quickly as the death of pine releases the under story species.
- **Do not log mixed-wood stands containing pine but many other mature trees as well:** Leave these in place for biodiversity conservation and/or future logging.
- **Leave large quantities of residual trees in cutblocks and leave riparian areas to diversify the future forest.**
- **Let fires burn:** When weather conditions are right for fires they can't be stopped anyway. The fires that can be stopped are beneficial because they would burn smaller areas and create a more diverse forest less susceptible to devastating infestations and wildfire. Fire control should be restricted to the protection of human infrastructure.
- **Encourage more diverse forests:** Stop practices that lead to monoculture pine stands such as clear cutting with little residual, scarification, planting only pine, and use of herbicides to eliminate other species.



.: MOUNTAIN PINE BEETLE IN ALBERTA .: .: WORKING WITH NATURE .:

Can they be stopped?

In BC a harvesting treatment called “**leading edge attack**” was tried. This strategy requires harvesting in areas before they experience epidemic infestation levels. It involves the early detection and removal of infested trees and patches to prevent isolated infestations from expanding.² This strategy did not work in BC and it will not work in Alberta.

This information is from the University of BC Faculty of Forestry:

The leading edge attack strategy was proven to be ineffective in preventing further infestation.

Research conducted by the Provincial-Level Projection Project found no evidence, virtually anywhere in the province, that the attempt to control the outbreak either slowed its spread or had any positive outcome with respect to the amount of live pine left on the landscape when the outbreak subsided. The research concluded that the outbreak cannot be controlled and will most likely subside as the supply of the beetle’s host, mature lodgepole pine, is depleted.²

What about biodiversity after the pine beetle outbreak has subsided?

Pine beetle effects can be beneficial to wildlife and biodiversity. When natural processes like pine beetle, disease and wildfire are suppressed in forests the result can be a more uniform forest that is even more susceptible to these processes in the future, and a decrease in diversity.³

Waterton Lakes National Parks provide a good example of living with pine beetle:

Half of the pine stands in Waterton Lakes National Park succumbed to beetle outbreaks starting in 1977. The most recent outbreak began its decline



in 1984-1989. Twenty years later, forests in Waterton Lakes show re-growth and diversity. Before and after pictures can be seen on the Parks Canada website.⁴

Impacts from the pine beetle were found to benefit caribou, at least in the short-term. For example, the caribou of the Tweedsmuir and Entiako areas of BC depend on lichens as a key food source. Beetle killed trees lose their foliage and more light can reach down through the forest, which results in increased lichen growth and a better chance of survival for the caribou.³

What is the harm in logging to control?

Logging does not stop the pine beetle, and attempting to do so may be harmful to the long-term health of the forest. For example, clear cut logging before or after the beetle kill can destroy other tree species that may be present and that would quickly replace the pine forest if it were not logged. Other problems include fragmentation of the forest with roads, removal of nutrients and organic material and compaction of the soil and negative effects on watersheds.

² <http://www.policy.forestry.ubc.ca/issuebriefs/Controlling%20the%20Spread.html>

³ http://www.env.gov.bc.ca/bcparks/conservation/pine_beele/pine_beele.html#q1
Government of BC, Ministry of Environment, BC Parks.

⁴ http://www.pc.gc.ca/docs/v-g/dpp-mpb/sec4/dpp-mpb4b_E.asp