British Columbia’s Forests

British Columbia (B.C.) has a wide-ranging response to the mountain pine beetle epidemic, which is expected to run its course by 2021. The province is focused on reforestation, forest inventory, product innovation and intensive silviculture.

Concurrently, the B.C. forest industry continues to create innovative opportunities for salvaged timber through value-added, bioenergy and structural uses.
Mountain Pine Beetle

Mountain pine beetles affect pine trees by laying eggs under the bark. The beetles introduce a bluestain fungus into the sapwood that prevents the tree from repelling and killing the attacking beetles. The fungus also blocks water and nutrient translocation within the tree. The joint action of larval feeding and fungal colonization kills a tree within a few weeks of attack. When the tree is first attacked, it remains green but the needles will usually turn red within a year of the attack. This means the tree is dying or dead and the beetles have moved to another tree.

Impacts to B.C.’s Forests

The mountain pine beetle has always been a natural element of B.C.’s interior pine forests. Normally, cold temperatures, forest fires and natural predators keep populations in check. However, an abundance of mature lodgepole pine, combined with mild winters and uncharacteristically hot, dry summers, led to an unprecedented epidemic.

The epidemic peaked in 2004 and has rapidly declined since then – by 2021, the mountain pine beetle outbreak will essentially have run its course. To date, it is estimated that more than 18.5 million hectares (45.7 million acres) of B.C.’s Interior forests are affected to some degree.

Supporting B.C.’s Communities

Since 2001, the B.C. government has committed close to $1 billion in funding to support pine beetle efforts within B.C. – both to battle the epidemic and to support communities in affected areas. This funding helps to develop diverse economic opportunities that will grow over time, be resilient and provide long-term stability.

As of 2015, $383 million had been invested through the Forests for Tomorrow Program to reforest areas affected by wildfires and the mountain pine beetle that are not salvaged and replanted by the forest industry.
Capturing Economic Value

Wood from beetle-affected trees will retain its commercial value for sawlogs 8-12 years after the tree has died. This shelf life is dependent on a number of factors, including economic and stand site conditions. The trees remain commercially viable as sawlogs longer under drier conditions. In areas where it is wetter, the trees tend to rot at the base and fall faster, especially if they are larger.

B.C.’s Chief Forester temporarily increased allowable harvest levels in areas affected by the beetle to recover economic value from the beetle-affected trees and speed replanting. The government has also offered licences to encourage alternative emerging industries such as wood bioenergy and pellet plants.

In the next 10–20 years, as the beetle-affected timber no longer becomes salvageable, the province’s overall supply of mature timber in the Interior is expected to decrease by about 20% when compared to harvest levels before the mountain pine beetle epidemic.

The province continues to address this reduction of timber supply through reforestation, managing forest inventory and investing in silviculture, as outlined in the Beyond the Beetle: A Mid-Term Timber Supply Action Plan.

Innovative and Efficient Use of Fibre

Recognizing impacts of this epidemic on future timber supply, the Province’s Forests for Tomorrow program identifies the most productive growing sites and ensures they are restored to fully stocked, free growing timber as quickly as possible. The focus on harvesting only the standing dead pine allows other healthy species to remain in the forest to help support values such as biodiversity, wildlife habitat and to supply mills 20 to 50 years from now.

When B.C. forest companies log on public land, they are legally required to reforest these sites within a specified time period. Reforestation will consider methods to prevent future widespread epidemics with improved natural seedlings that are bred to grow faster and be more resilient, and managing species, age and other parameters. This allows faster regeneration and rehabilitation of forests affected by the mountain pine beetle, reduces the risk of severe wildfires and provides economic opportunities.

Forests for the Future

On average, over 200 million natural tree seedlings are planted annually on public forest land in B.C. Photo: Brudder

Wood affected by the mountain pine beetle is used as value-added interior millwork and furniture. Photo: Canada Wood Japan
Wood: A Responsible Choice

As environmental awareness grows, building professionals are using wood to lower environmental impact because it stores carbon and minimizes the use of energy, water, and materials, while also reducing impacts on human health and the environment. Wood is a high-performance and versatile choice for buildings of all sizes.

Wood from trees affected by the mountain pine beetle is no exception – in fact there is added value in using this fibre for wood products rather than leaving the trees in the forest to decay or burn and release carbon dioxide into the atmosphere.

Project Profile: The Richmond Olympic Oval

The Richmond Olympic Oval is an excellent example of how wood from forests affected by the mountain pine beetle can be used in new, innovative applications – and deliver environmental benefits.

The roof of the Richmond Olympic Oval is an innovative design, employing beetle-affected wood. The Oval’s 33,000-square-metre (322,917-square-foot) superstructure was constructed almost entirely from wood and its unique, innovative roof system is made up of glulam beam arches and prefabricated one-of-a-kind “WoodWave” panels.

The wood used in the Oval is making a significant contribution to its environmental performance by storing carbon for the life of the structure. Using wood from beetle-attacked trees for the Oval roof also demonstrates B.C.’s confidence in the quality of the resulting wood products.

Mountain pine beetle-affected wood can be used for anything from standard framing lumber to value-added wood products. The beetles carry a fungus that leave a blue or grey stain; which does not affect the wood’s strength properties, as long as the dead trees are harvested in a timely fashion.

For More Information

Cover photo: Mountain pine beetle attacks impacted forests across B.C.’s Interior. Quesnel, B.C. Photo: Moresby Creative.

The wood grain featured at the top of this factsheet is lodgepole pine.

Pine beetle wood was used to manufacture an innovative mass timber product, cross laminated timber, for the Bioenergy Research & Demonstration Facility at the University of British Columbia. Photo: Don Erhardt

In total, the roof system in the Richmond Oval uses about one million board feet of 2x4 spruce-pine-fir dimension lumber – primarily from trees affected by the mountain pine beetle. Photo: Martin Tessler

BC companies salvage wood affected by the mountain pine beetle near Fraser Lake, B.C. Photo: Moresby Creative.

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For More Information

MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS www.gov.bc.ca/pinebeetle

Forests for Tomorrow
Beyond the Beetle: A Mid-Term Timber Supply Action Plan

About 50% of wood products exported from Canada come from British Columbia’s sustainably managed forests. This publication is part of the ‘Forest Facts’ series, published by Forestry Innovation Investment, the Government of British Columbia’s market development agency for forest products.

To learn more about the mountain pine beetle and other B.C. forest facts, visit:

naturallywood.com