



## Q&A: Omineca spruce beetle outbreak

May 4, 2018

### Q. How big is this outbreak? What kind of impact has it had so far?

- The most recent provincial aerial overview survey was completed in fall 2017 and found about 370,000 hectares of spruce beetle-infested forest. This is now considered to be the largest outbreak of spruce beetle within the Omineca region in recorded history.
- To date, there has been no increase in the Allowable Annual Cut to deal with the outbreak. Harvest operations in the region are strategically targeting stands to reduce beetle populations and still recover the economic value of the timber over the long term.
- The ministry continues to closely monitor the spread and work collaboratively with forest licensees, First Nations and the public to mitigate its impacts.

### Q. Will we be able to control the current spruce beetle outbreak?

- Spruce beetles occur naturally in British Columbia's forests. Significant increases in population numbers are due to favourable environmental factors such as climate change.
- Large periodic population increases are impossible to control completely, but the ministry's goal is to mitigate the impact of spruce beetle where it is feasible and appropriate to do so.
- Ministry staff are working with forest licensees to effectively and efficiently prioritize and plan harvesting activities to reduce beetle populations, while maintaining non-timber values in spruce ecosystems.

### Q. What are we doing?

- The ministry is taking a balanced and collaborative approach with licensees, First Nations and public stakeholders to address this forest health challenge.
- The goal is to reduce spruce beetle populations through the harvesting of infested timber while ensuring the protection of all forest values, including non-timber values and the mid-term timber supply.
- See ["Working Together, B.C.'s Spruce Beetle Mitigation Strategy"](#)

### Q. Will the impact of spruce beetles be similar to that of the mountain pine beetle?

- Stands that are impacted by spruce beetle typically have a greater diversity of species and age ranges than stands impacted by the mountain pine beetle, in which the trees tended to be closer to the same age.
- Due to this diversity, the impact on stands affected by spruce beetles is often less severe than the impact on stands affected by mountain pine beetles.

### Q. What are the potential impacts on the wood supply as it relates to mills and jobs?

- The spruce beetle has a slower rate of spread than the mountain pine beetle, but if the current rate and intensity of the spread continue, it may cause future reductions in available fibre for mills.



#### Q. Is climate change playing a role?

- With changing climate conditions, the scientific literature suggests that insect outbreaks (like the current spruce beetle outbreak) will increase both in severity and frequency in the foreseeable future.
- B.C. is not unique in this respect. Outbreaks of bark beetles are occurring to the north, in the Yukon and Alaska, and to the south, in the western United States.

#### Q. Is there an increased risk of wildfire?

- The potential risk of wildfire from the effects of spruce beetles will be assessed on an ongoing basis.
- The ministry manages wildfires through a combination of wildfire prevention, mitigation and suppression strategies on both Crown and private lands outside of organized areas (such as municipalities or regional districts).
- While the BC Wildfire Service is mandated to mitigate the impacts of wildfire (particularly on forests and grasslands), it places a high priority on fuel management and wildfire suppression in interface areas where communities border on forested areas.
- Trees killed by spruce beetles can contribute to an increased fire risk, although spruce ecosystems are different from areas where lodgepole pine trees grow. They are often on wetter sites and (because they are more diverse) 100% mortality usually doesn't occur within the stand. These factors help reduce the wildfire risk.
- Generally speaking, however, standing dead conifers increase the fire risk — especially if a large proportion of the stand is killed. It depends on the severity and extent of the attack and (to a certain extent) on the characteristics of the stand and ecosystem where the attack occurred.

#### Q. What is the potential impact of forestry operations on other forest values?

- Spruce beetle outbreaks have occurred throughout history and are natural components of forest dynamics.
- The current level of harvesting is focused on: balancing the need to control the beetle's spread; minimizing the impact of beetles on forest resources; and maximizing timber recovery before the wood quality deteriorates.
- As a result of impacts from previous logging of mountain pine beetle-attacked stands, there is a clear need to balance harvesting levels with the safeguarding of other forest values (such as wildlife habitat).
- Measures have been implemented to provide direction to forest professionals.
- One such guidance document is the 2017 [Omineca Stand and Landscape Level Retention guideline](#). This document strives to ensure the retention of mature forest areas to protect other values.
- Additional retention guidance is in place, such as for the protection of fish and water quality values or the protection of fishery-sensitive watersheds.



**Q. Is the current outbreak in the Omineca going to result in another Bowron Valley clear-cut?**

- No. Forest legislation, policy and practices have changed substantially since the 1980s, including an increase in the number of reserves and protected areas.
- While the area currently experiencing attacks is quite large, the severity of the attacks in individual stands can vary greatly.
- Severely attacked stands and areas that have recently been attacked (i.e. live beetle populations are present) are the highest priority, while assessments of areas where infestations are lighter will take into account future long-term harvesting and non-timber values.
- The ministry, First Nations and industry professionals are constantly working towards better outcomes from our working forests.

**Q. How will northern communities be affected?**

- Anything that impacts the short-term and mid-term timber supply will affect communities in northern B.C.
- This spruce beetle outbreak, coming on the heels of the recent mountain pine beetle outbreak, puts additional pressure on the short-term and mid-term timber supply.
- The ministry's objectives are to maintain the mid-term timber supply and ecological integrity of spruce stands, recognizing that these stands are foundational resources for many northern communities.

**Q. Could we use insecticides?**

- Bark beetles spend the majority of their life cycle safely under the bark of trees, so non-specific aerial spraying could only be used in the short period of time when the beetles are flying.
- This isn't particularly effective because the insecticide would have to be applied over very large areas repeatedly in order to kill a significant number of beetles.
- Scientists are working to develop systemic insecticides that could be used in "trap trees", but none of these materials are currently registered for use in Canada and many are just in the testing phase.

**Q. Is the provincial government partnering with the federal government to deal with this spruce beetle outbreak?**

- Although B.C. continually collaborates on forest health information and research with the Canadian Forest Service and other provincial governments, the management of Crown forests is primarily the responsibility of the provincial government.

**Q. What measures are in place to safeguard non-timber values and consider the impact on wildlife habitat in forests attacked by spruce beetles?**

- The ministry's role is to appropriately balance resource values in a manner that is consistent across all sectors and government agencies. The *Forest and Range Practices Act* and the Forest Planning and Practices Regulation establish legal objectives that apply to forestry operations. See the 2017 [Provincial Timber Management Goals, Objectives and Targets](#)



- Although the Ministry of Forests, Lands, Natural Resource Operations and Rural Development often manages timber values and non-timber values at a much larger scale than the area where the current spruce beetle outbreak is occurring, geographically specific measures are also taken. Ungulate Winter Ranges, Wildlife Habitat Areas and Fishery Sensitive Watersheds are designations under the Government Action Regulation that the ministry uses to protect specific values within geographically identified areas.
- To ensure that a range of old forest types remain on the landscape, there are specific biodiversity orders in place for the Prince George Timber Supply Area and the Mackenzie Timber Supply Area. These orders seek to manage harvest operations within an acceptable range of natural variability.
- In March 2018, 17 Fishery Sensitive Watersheds were designated within the Omineca region, four of which are located in the Parsnip system (which overlaps the current spruce beetle outbreak).
- The selection of these areas was based on inherent watershed sensitivities and high fisheries values (e.g. bull trout and Arctic grayling).

**Q. What impact will the recently approved Omineca Fishery Sensitive Watershed (FSW) have on the spruce beetle mitigation strategy?**

- A goal of the Fishery Sensitive Watershed designation is to increase retention near small streams, which will benefit fish habitat by allowing shade trees and large, woody debris to remain part of the environment.
- Where there have been high rates of harvest in a watershed, an Equivalent Clearcut Area (ECA)<sup>1</sup> requirement may result in the rescheduling of harvest plans to allow hydrologic recovery to occur in a watershed.
- The Equivalent Clearcut Area objective may necessitate (depending on the amount and timing of harvest area within the Fishery Sensitive Watershed) either or both of the following:
  - (i) rescheduling of timber harvest across the planning area (Timber Supply Area or Tree Farm Licence) so as to achieve hydrologic stability and recovery in the Fishery Sensitive Watershed
  - (ii) utilizing alternative silvicultural systems (e.g. partial cutting) so as to maintain greater canopy closure and minimize Equivalent Clearcut Area impacts while realizing continued harvest opportunities.

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<sup>1</sup> Equivalent Clearcut Area (ECA) is defined in the Fishery Sensitive Watershed (FSW) Orders as a disturbance-based indicator that identifies the proportion of a watershed, or specified sub-units, that has an equivalent hydrological response to a clearcut. Disturbance-based equivalency factors are assigned to forested areas that have been harvested (with consideration given to the silvicultural system and regeneration growth), cleared (anthropomorphic such as roads, private land, gravel pits, mines, railway, pipelines, utility corridors, etc.), burned (wildfire or prescribed), and/or impacted by insect infestations.



**Q. How is old growth forest being considered and managed in light of this outbreak?**

- Conserving old-growth forest is an important part of resource management in British Columbia. The definition of old-growth forests is based on the age of a stand and its ecological features, including climax tree species, large live trees, standing snags, rotting logs on the ground and patchy gaps in the canopy. These important ecological elements are captured in Old Growth Management Areas and are not easily created or replaced.
- Insects and disease are important ecological factors in an old-growth forest. The presence of dead trees due to a spruce beetle attack can enhance the value of an Old Growth Management Area through the creation of valuable habitat features, such as large, standing snags (for wildlife trees), coarse woody debris (for cover and protection) and nutrient recycling.
- The Omineca region has developed guidelines for the treatment of spruce beetles in special management areas that include options such as alternative silviculture methods (to remove infested trees) and not allowing harvesting where high habitat values exist.

**Q. How much revenue does the Crown receive from wood that has been attacked by spruce beetles?**

- Stumpage is the amount paid to the Crown by a licensee to harvest trees from Crown forests.
- Stumpage rates can vary significantly, based on factors such as operability (taking into account the difficulty of harvesting on steep slopes), species composition, hauling distance and the current market price of lumber.
- The 2017/18 stumpage rates for spruce stands that have been severely attacked or very severely attacked (where more than 30% of the trees have been affected) range from \$9/cubic metre to \$40/cubic metre.
- Total stumpage and revenue to the Crown from B.C Timber Sales and all other harvesting operations in the Omineca region was about \$256 million in the 2017/18 fiscal year.

**Q. What is “diesel staining”?**

- There is a concern that trees attacked by spruce beetles may contain a stain that is anecdotally referred to as “diesel stain” or “diesel rot”, because it appears as if a bit of diesel fuel has been splashed onto the wood surface.
- Ministry scientists are investigating the cause and prevalence of this staining, but it is likely to be a pre-existing stain that occurs naturally in spruce wood and is likely unrelated to the spruce beetle infestation.