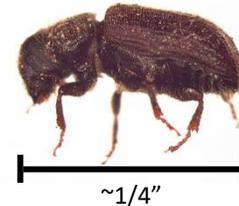




Forest Management and Spruce Beetle

The spruce beetle (*Dendroctonus rufipennis*) is native to the spruce forests of Alaska. Spruce beetles are small, generally less than ¼ inch long, and dark brown/black in color. They generally prefer white spruce, Sitka spruce, and Lutz spruce (white/Sitka hybrid), but may attack black spruce, ornamental spruces, and other conifers during an outbreak.



~1/4"
Adult spruce beetle

When populations are low, spruce beetles typically attack stressed, damaged, or dying trees, such as windthrown trees, those weakened by fire, or recently cut trees and large-diameter slash. When beetle populations outgrow the supply of stressed or damaged trees they may shift their attacks to standing trees. Spruce beetles prefer large diameter, slow-growing, mature spruce. During outbreaks, however, trees as small as four or five inches in diameter may be attacked.

Signs and Symptoms of Spruce Beetle Attack



Boring dust at
base of tree



Pitch tubes
on trunk



Adult beetle &
entry/exit hole



Woodpecker
activity on trunk



Life stages
under bark



Needle color
change

Forest Management

Once spruce beetles mass attack a tree, nothing can be done to reverse the impact of the beetle attacks on the tree. Therefore, it is important to be proactive in managing your forest to help minimize risk of an attack or help limit the impact of an infestation.

Avoid harvesting live spruce or creating fresh spruce slash during the beetle flight period unless logs and slash created during harvesting are to be promptly processed. The beetle flight period typically occurs from about mid-May to mid-July, during which spruce beetles are actively seeking new trees. *Processing* in this document refers to any of the following: milling of the logs, cutting/splitting for firewood, debarking, chipping, burning, or burying. *Note that any burning must be done in accordance with all applicable regulations.*

Protecting individual high-value **unattacked** spruce trees from spruce beetle attacks is possible. Specific pesticides, when applied correctly, can provide protection from spruce beetle attacks for up to two years. Contact your local University of Alaska – Cooperative Extension Office or visit www.alaskasprucebeetle.org for more information.

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Forest Management and Spruce Beetle



Regardless of beetle population size, the following practices are recommended:

- Avoid injury to standing trees; water and/or fertilize trees as needed and where possible.
- Promptly clean-up and process windblown, damaged, or otherwise weakened spruce trees to avoid a buildup of beetle populations in those trees.

When beetle populations are **low to moderate**, several practices can help decrease susceptibility of trees to attack. *Note that these practices may not effectively reduce beetle attacks during an outbreak.* These practices include the following:

Pruning – Prune lower branches of spruce trees to increase light and airflow around the base of the tree. Pruning should be conducted outside of the spruce beetle flight period. Be sure not to remove more than 1/3rd of the live branches in a growing season.

Thinning – Thinning of overstocked forests can improve the overall health and vigor of the remaining trees. Thinning should be conducted outside of the spruce beetle flight period.

In **actively infested** forest stands, the best mitigation practice is called a *sanitation harvest*. For assistance in identifying actively infested trees, please refer to the signs and symptoms of attack listed in this document. When conducting a sanitation harvest, all actively infested trees as well as those that have recently been blown down or are otherwise damaged are felled and processed. Cut tree stumps as low to the ground as possible; spruce beetle will attack stumps and above-ground roots.

If limited in the number of trees that can be removed, focus efforts on actively infested and recently killed trees which are near structures or could otherwise pose a risk were they to fall. Removal of these trees near structures can also be part of creating a more Firewise property. For more information on the Firewise program, please contact your local Alaska Division of Forestry office.

Spruce beetle-killed trees are suitable for use as **firewood** as well as other forest products. Actively infested trees harvested for firewood should be promptly split and stacked to allow maximum airflow and speed up the drying process. Care should be taken to avoid stacking firewood containing beetles against or near uninfested spruce trees. Dry, seasoned firewood is not attractive to spruce beetle, nor can they survive in it. Spruce beetle does not bore into the wood of affected trees; any tunnels observed going into spruce firewood are the result of attacks by secondary insects.

More Information:

www.alaskasprucebeetle.org

Or

<http://forestry.alaska.gov/insects/>