

Harvesting bark beetle-infested firewood brings unwanted pests to town



By Scott Schell and Les Koch

Harvesting firewood from trees killed by pests could bring those pests to town.

Years of drought and bark beetle infestations have left high numbers of dead trees in rural forests throughout Wyoming. Firewood cutters need to be aware that standing trees may still harbor bark beetle life stages and need to thoroughly inspect these trees before cutting and transporting them to communities.

If trees still have red or yellowed needles, the next generation of the beetles that killed them may still be

under the bark. Beetles that emerge from under the bark can attack susceptible species of trees as far away as a mile from the firewood pile.

The most common tree-killing beetle in Wyoming transported with firewood is the mountain pine beetle (*Dendroctonus ponderosae*), which attacks lodgepole, ponderosa, limber, and Austrian pines.

Mountain pine beetle will attack and kill as many as 13 different species of pine trees, many of which can be found in Wyoming towns. The beetles carry a fungus that clogs the vascular tissues carrying nutrients to the needles, gradually killing the tree.

The beetle has a one-year life-cycle, and new adults emerge from infested trees by chewing their way out through the bark, usually starting in June. These emergence holes are about the size of a pinhead and do not have pitch tubes like entrance holes.

The number of beetles produced by one mountain pine beetle-infested tree is estimated to be enough to infest two or more trees of similar size.

The emerged adult female beetles fly away in search of trees of suitable species and size (6 inches or more in diameter are preferred) to bore through the bark to create a characteristically shaped gallery or chamber in the tree's phloem (a part of the cambium layer just under the bark). The phloem layer contains cells that produce new tissue responsible for increased girth. The beetles lay

eggs in the gallery, and the trees try to defeat the attack by producing enough pitch to force the beetle back out. These gobs of resinous sap and chewed-up bark are called pitch tubes. They can be seen in the tree trunk from near the ground to 30 feet up on big trees.

Dead beetles can sometimes be found embedded in the pitch tubes if the tree wins the battle. The more beetles that attack a tree, the more likely they will succeed. Trees stressed by drought, overcrowding, or physical injury are more likely to succumb.

Even healthy, watered trees in town can be successfully attacked if bark beetles are numerous.

Engelmann spruce and Douglas fir trees harvested for firewood have different, yet just as harmful, species of beetles that attack them and can pose a threat to ornamental trees in towns. These trees don't produce pitch tubes in response to a bark beetle attack. Sawdust pushed from the entry holes and flakes of bark removed by woodpeckers seeking an easy meal signal trees infested with other species of bark beetles.

Firewood should only be harvested from trees dead long enough that all needles have fallen and emergence holes are present in the bark. When trees have decayed to that stage, the insect species living under the remaining bark or in the wood are not threats to surrounding, living trees.



G.D. Amman, U.S. Department of Agriculture Forest Service, Bugwood.org

Long-horned or metallic wood-boring beetles may occasionally infest firewood. These insects are generally beneficial since they construct large galleries in the wood that aid airflow throughout the pile and shorten drying time. They typically do not attack surrounding healthy conifer trees. Stacking firewood on top of pallets to facilitate air movement underneath the pile speeds the drying process.



If there is any question as to whether a standing tree has bark beetle life stages, please pick another tree without needles, and harvest the questionable tree next year to keep urban trees safe.

On the Web: <http://www.fs.fed.us/rm/landscapes/Solutions/Pinebeetle>

<http://slf-web.state.wy.us/forestry/health2.aspx>

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