University of Idaho
Cooperative Extension System

Insects and Diseases No. 6

UI Extension Forestry Information Series

Bark Beetles, Slash, and Forest Fertility

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In recent Extension programs on thinning and insects and disease, I have noted confusion regarding slash, downed trees, and bark beetles. This is somewhat understandable. On one hand, we encourage people to leave more tops, branches, and other woody material distributed through the woods (within fire safety limitations) to enhance forest nutrition, fertility, and understory wildlife habitat. On the other hand, we also encourage people to remove green slash or winter downed trees that can provide a breeding ground for bark beetles, which may emerge to attack standing trees.

Many forest owners are unclear about how to reconcile these issues – what types of slash can be left during what times of year and under what conditions? As a result, they often believe they should remove all slash and downed trees to guard against bark beetles. That is not necessary. There are many species of bark beetles; only a few of the ones that kill trees breed in slash of downed trees. Furthermore, slash or downed trees must be of a specific species, size, and available at a specific time of the year to present a hazard to standing trees. The chart below (Table 1) may help you sort out these differences, and identify what is generally safe to leave on the ground and when, regarding the most commonly damaging bark beetles.

Trees dead longer than one year are not a bark beetle hazard. You will often find insects in them that are superficially similar to bark beetles, but they are not usually insects that kill trees. The same

CONTINUED ON PAGE 2

Table 1. Tree species and how slash or downed trees must be treated to prevent bark beetles.

Tree species	Bark beetle	Material needing treatment and method	Material that may be left for forest nutition and wildlife
ponderosa pine (*Pinus ponderosa*) and lodgepole pine (*Pinus contorta*)	pine engraver beetle (*Ips pini*)	Do not leave greeen pine slash larger than 3 inches in diameter December to June. Otherwise, burn, chip, or dozer trample slash.	Pine stems smaller than 3 inches in diameter or created July to November.
Douglas-fir (*Pseudotsuga menziesii*)	Douglas-fir beetle (*Dendroctonus pseudotsugae*)	Remove or burn green Douglas-fir slach or downed trees larger than 8 inches in diameter within one year of creation. Those downed in May-July should be taken out before the following April.	Douglas-fir stems less than 8 inches in diamter or more than 1 year old.
Grand fir (*Abies grandis*)	fir engraver beetle (*Scolytus ventralis*)	Remove or burn green grand fir slash or downed trees larger than 3 inches in diameter December to July.	Grand fir stems less than 3 inches in diamter vreated August to November.

goes with large wood boring insects (commonly found working in dead trees or firewood – see below) that are often mistakenly referred to as bark beetles. These insects rarely kill trees. In fact, they are beneficial to forests, to the extent they start tearing down dead trees, making them less of a fire hazard and releasing their nutrients back to the forest. They also provide food for a variety of wildlife species.

Wood left in the forest is not necessarily wasted. Large and small organic debris left distributed across the forest acts much like mulch in a garden, providing nutrients and adding to forest soil structure. It also provides food and habitat for insects and other organisms that further benefit soil fertility and structure. To quote "a famous worm" in a recent children's book by Gary Larson about a family of worms, *"I think that I shall never see, a thing as lovely as a big, rotting tree carcass"*. Try to practice smarter forestry – remove or treat slash only to the degree that it truly creates an insect or fire hazard or unduly limits access.

For more information on these insects, your local Extension office has a number of publications with more information. For technical assistance on how to reduce slash hazard to acceptable levels on your site (in addition to size and type of slash, other factors, such as distance to water and road access also affect slash hazard), contact your local Idaho Department of Lands fire warden.

Thanks to Ladd Livingston, IDL Forest Entomologist for review and comment.

This information first appeared in Woodland NOTES, Vol. 10, No. 2.

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