Wood Borers and Bark Beetles After a Fire

After a fire, trees are often attacked by wood boring insects and bark beetles. These native insects are always present in the forest, but many are attracted to fire activity and the weakened trees left behind. Wood borers are beetles or wasps that live under the bark and inside the wood of trees, and their tunneling activity helps to decompose the tree. They normally attack weakened trees, and aren't usually capable of killing healthy trees. Trees that are not killed outright by the fire are often attacked by wood borers or bark beetles the year of, or the year following the fire. Wood borers do not always kill scorched trees, but they do add more stress to these already stressed trees. Bark beetles live under the bark, and are capable of attacking healthy trees, though some do specialize in weakened trees.

• **Wood Borers** Most wood borers belong to two beetle families: the longhorn beetles (round headed borers), and the metallic wood boring beetles (flat headed borers). A separate unrelated group of borers, the horntails or wood wasps, also commonly attack trees after a fire.

- **Identification**
  - Look for **egg niches** on the darkened bark (see image below). Females chew a hole in the bark and lay eggs there. The eggs hatch and larvae tunnel under the bark before entering the sapwood.
  - Look for **boring dust** or sawdust in bark crevices or around the base of the trunk. Boring dust of longhorned beetles can look like wood shavings.
  - Look for **woodpecker** activity loosening the bark and exposing insect galleries.

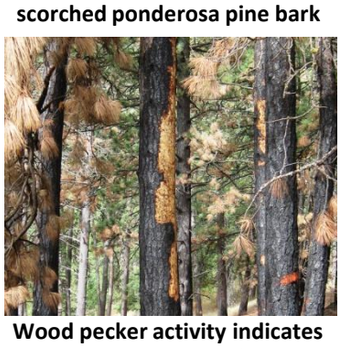
• **Bark Beetles** Bark beetles are a large group of insects that live under the bark of trees, often killing them. Many are capable of killing healthy trees, but some are more common after a fire. Bark beetles spend almost their entire life cycle under the bark, but they do not bore into the wood. The most common species are shown on the opposite side of this document.

- **Identification**
  - Look for fine **boring dust** on the bark or around the base of the tree. Bark beetle boring dust is usually brown colored, and very fine. It usually shows up well against the dark, fire-scorched bark.
  - On pines, **pitch tubes** may be present with red turpentine beetle and western pine beetle (but not pine engraver). No pitch tubes will be seen on Douglas-fir, grand fir or western redcedar.
  - Look for **woodpecker** activity, especially with western pine beetle on ponderosa pine.

Wood borers

Wood borer egg niche on scorched ponderosa pine bark

Wood borer frass under fallen log



Wood pecker activity indicates borer or bark beetle infestation

Longhorned borer frass around base of fire scorched tree

Bark Beetles

Red turpentine beetle pitch tube on ponderosa pine

Western pine beetle pitch tubes on ponderosa pine

Orange inner bark from wood pecker activity on ponderosa pine indicates western pine beetle infestation

Douglas-fir beetle frass on scorched tree

Insects Attracted to Scorched Trees

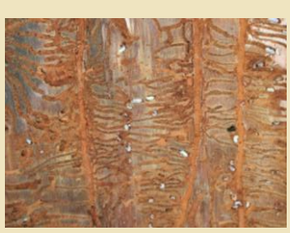
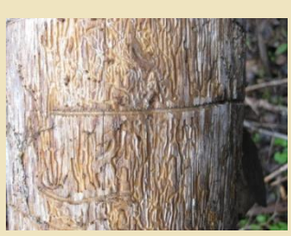
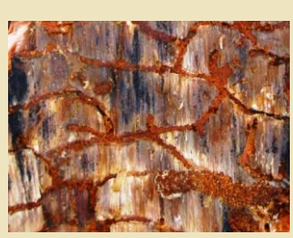
Wood Borers *(Not species specific)*
(Will attack most conifers this year)

	Longhorned Beetles (Roundheaded borers)	Metallic wood borers (Flatheaded borers)	Horntail Wasps (Wood wasps)	
Adults				Adults
Larvae				Larvae
Frass/Galleries under bark			*Frass and galleries are in wood and are rarely seen*	Frass/Galleries under bark

Photos courtesy of www.bugwood.org

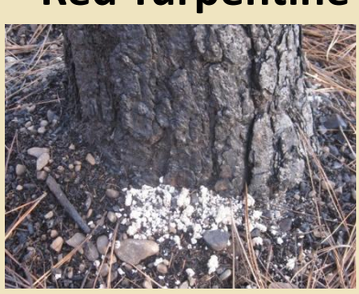
These species usually attack weakened or dead trees

Aggressive Bark Beetles *(Species specific)*

	Douglas-fir Beetle *(Will attack Spring 2016)* *Only Douglas-fir*	Fir Engraver *(May attack this year)* *Only grand fir*	Western Pine Beetle *(May attack this year)* *Only ponderosa pine*	Pine Engraver *(May attack this year)* *All pine species*	
Frass					Frass
Galleries					Galleries

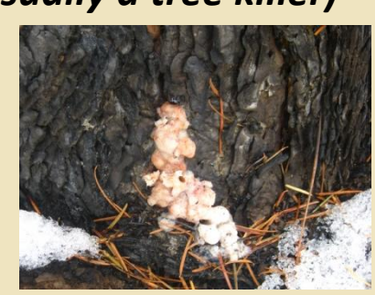
These species can kill trees

Red Turpentine Beetle *(Not usually a tree killer)*



Granular Frass

All pine species



Pitch tube

Red turpentine beetle pitch tube on scorched ponderosa pine. This bark beetle does not generally kill trees
Sheep Fire

Roundheaded borers in ponderosa pine log, 11/2012.
Fire occurred in August. Note blue stain from borers.

Flatheaded borers in ponderosa pine log, 11/2012.
Fire occurred in August. Note flattened head and typical galleries.

Springs Fire, 11/2012

Most of these pines did not survive the fire that occurred in July, 2013.

Mica Bay Fire, 10/2013

Insects and woodpeckers often mark the trees that need to be removed

Few of these pines will survive the fire that occurred in July, 2013.
The landowners had a salvage sale in the fall.

Mica Bay Fire, 10/2013

Insects and woodpeckers often mark the trees that need to be removed.
Wood borer frass at the bases of trees scorched in July.

Egg niches from wood boring beetles

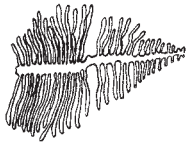
Mica Bay Fire, 8/2013

Ponderosa pine can withstand a light ground fire if the bark and foliage is not severely scorched

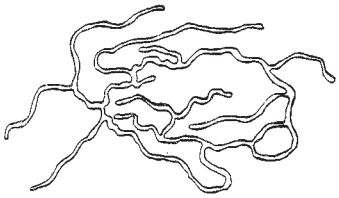
Hauser Fire, Summer 2012
Pictures taken in November

Bark Beetles

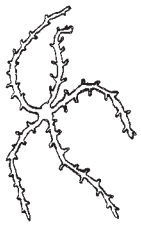
Figure 92. Bark beetle gallery patterns.



a. Fir engraver

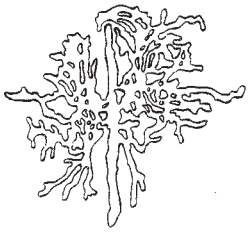


b. Western pine beetle

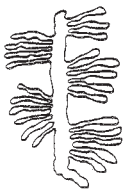


c. Western balsam bark beetle

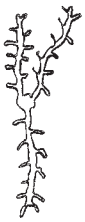
d. Mountain pine beetle, Jeffrey pine beetle



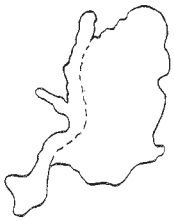
e. Spruce beetle



f. Douglas-fir beetle



g. Pine engraver, Piñon engraver beetles



h. Red turpentine beetle