

Fire Damaged Trees and Forest Health Issues

The buildup and expansion of the insects will depend on the weather. If we have normal weather (temperatures and rainfall), there should be minimal expansion (if any) of the insects into adjacent healthy stands. If we go into a hot, dry period, the insect populations could develop faster and expand out into the adjacent stands.

PINES

- **Ips Bark Beetles (Pine Engraver)** - populations should build in the trees that survived the fire. These bark beetles may confine themselves to the trees that are fire damaged throughout the burn area. If we get hot dry weather, their populations could develop much faster and have additional generations. If this were the case, I would watch the adjacent stands starting in mid to late July for symptoms of Ips attacking the trees. The symptoms to watch for are: tree crowns turning from dark green to pea green, then to straw yellow, and finally to red. However, these are endemic insects, so you may see a few trees in the adjacent stand showing these symptoms, which is normal. If you observe large pockets forming, this is a problem.
- **Red Turpentine Beetle** - beetles may colonize the lower bole of trees that survived the fire. If the trees are scorched bad and are drying out, these trees should not be a suitable host for the beetles. I would not expect these beetles to move out of the burned area. These are endemic insects, so you may see a few trees in the adjacent stands showing these symptoms, which is normal. Look for large fresh pitch tubes (globes of pitch) on the lower portion of the bole. The pitch tubes will be reddish brown in color and there should be a hole in the pitch tube from the insect boring into the tree. Normally you do not see these pitch tubes higher than dbh, but according to the literature, they can be up to 8 feet on the bole.
- **Pales Weevil** - populations may build up in stumps. If the trees are salvaged, replanting should be delayed at least one year after harvest, two years would be much better. If you replant the site right after a harvest, you may get a lot of mortality to the seedlings from weevil feeding.
- **Root Collar Weevil** - populations may build up in weakened trees, and they could move out into the adjacent stands. These beetles could stress trees to the point where Ips Bark Beetles, Red Turpentine Beetles could establish themselves in those trees.
- **Ambrosia and Powder Post Beetles** - these beetles may move into the dead and dry trees. They bore deep into the wood and create small galleries. Ambrosia Beetles also bring a fungus into the tree with them, so this may also cause a degrade in the log.
- **Pine Sawyers** - since these beetles colonize dying, dead trees, you may hear a lot chewing out in the stands - if you haven't heard it already. This may cause a possible degrade in the log.
- **Root Tip Weevil** – on very poor sites, if you have both Jack and red pines growing together, you will have problems with this insect on both species.

Root Tip Weevil will cause scattered branch flagging throughout the trees and will cause enough stress to the trees to allow other secondary organisms to come in and possibly kill the trees. These poor sites are better suited to Jack pine.

- **Armillaria Root Rot** – may have up to 7% annual mortality to planted pines, and up to 35% cumulative mortality caused by this pathogen.

OAKS

- **Twolined Chestnut Borer** - probably will infest damaged oaks. May move out into adjacent stands.
- **Ambrosia and Powder Post Beetles** - these beetles may move into the dead and dry trees. They bore deep into the wood and create small galleries. Ambrosia Beetles also bring a fungus into the tree with them, so this may also cause a degrade in the log.
- **Oak Wilt** - will not be a concern. The wounds to the tree are not fresh so the Picnic Beetles are not attracted to them and the fire has damaged the cambium, so it is not a suitable infection court for the Oak Wilt fungus.
- **Fungus, *Cerrena unicolor*** - saprophytic sapwood rot, but can colonize living sapwood, causing canker-rot in trees weakened by environmental stress.

ASPEN

- **Poplar Borer and Saperda Borer** - populations of these beetles may build in the trees that survived the fire. The Poplar Borer also carries a decay fungus with it. These beetles bore into the tree and may cause a possible degrade in the log. The Saperda Borer causes galls to form when the eggs are laid and the larvae begin to develop. These beetles may also cause problems in the regeneration of aspen.

Controls

- The best way to control these potential problems is to salvage the trees as soon as possible. The longer the trees are left on site, the chances of problems spreading into adjacent stands increases.

Salvage

- You will have approximately 2-5 months to salvage the wood before boring insects and fungal diseases start degrading the wood.
- Char will be a problem for salvage. The last I knew, pulp mills will not accept any logs with char on them because of the problem with the bleaching process.

Regenerating Stands

- You may want to hold off on replanting for 2 years to see what type of natural regeneration you get back. Jack Pine may seed into the burned over areas.
- Armillaria Root Rot could become a problem for reestablishing the sites to hardwoods and/or conifers.

- Mammal control may also be a problem for reestablishing the site to trees (deer, rabbits, mice, etc.).