

## Tree Insects and Diseases at Arrowhead

There are four basic types of trees at Arrowhead; Douglas fir, spruce, sub alpine fir (commonly called Balsam) and aspen. Each of these trees has its own set of insects and diseases that attack them.

The primary threat to Douglas fir trees is the Douglas fir beetle. These beetles are dark brown to black and about the size of a match head. They fly in late May through mid July and bore into the trees leaving small piles of saw dust in bark crevices. They lay eggs and when the larva hatch they go sideways just under the bark cutting off the flow of water and nutrients in the tree. Some trees will turn red in the fall but most will turn red in just a few days in the spring when they come out of dormancy. Douglas fir beetles tend to fly to nearby trees and the number of dead trees will increase over several years. In our part of Colorado the State Forest Service described Douglas fir beetles as being at epidemic levels in 2015. Arrowhead has been generally successful at limiting this problem to small areas (hot spots) by having an aggressive program of removing infected trees from Arrowhead and putting up beetle repellent MCH packs. Residents need to contact the Forest Manager in the spring if they observe Douglas fir with red needles. Information on ordering MCH packs is available on the Website in mid winter. (See the information below on how many to order)

Spruce trees are attacked by two different kinds of beetles. The spruce beetle is similar in size and color to the Douglas fir beetle and acts in a similar way but generally is active in the tree for 2 years rather than one year. Spruce trees tend to die slowly during this time with the tree slowly losing needles and turning yellow. Because spruce bark is relatively thin, woodpeckers can have some success repelling the attacks. The best indicator that the trees are under attack is the flacks of bark laying on the ground or snow around the base of the tree. Spruce beetles have the potential to spread very rapidly killing every spruce over 8" in diameter over large areas. This has occurred over the last several years south of Lake City and Forest Service and BML lands on the Alpine Plateau are currently under a very heavy beetle attack. The number of individual large spruce being killed by the spruce beetle has increased over the last two years at Arrowhead, but we have so far been able to prevent the wide spread mortality seen in nearby areas. The best defense against spruce beetles is the timely removal of infected trees. If you see signs of beetles on your spruce trees, contact the forest manager for assistance.

Spruce trees are also attacked by the spruce ips beetle. These beetles start their attack at the top of the tree and work their way down the tree over several years. They tend to attack only individual trees and are not considered an overall threat.

Both of these types of spruce beetles tend to go into fresh blowdown at about 10 times the rate of a standing tree. These spruce blowdown are referred to as trap trees and should be left in place until August and then removed from Arrowhead.

Subalpine fir (balsam) are considered to be a relatively short lived tree and are subject to attack by several insects and diseases. The number of dying subalpine has been increasing over the last few years but is still at endemic levels. Because the trees tend to retain their red needles for several years, we try to remove them for aesthetic reasons.

Aspen are also a short lived tree. Aspen trees grow in clones where the trees are all related to each other and the root systems are interconnected. These clones can be anywhere from a small group to many acres in size. Different clones will leaf out at different times in the spring and change color at different

time in the fall. Sudden Aspen Decline is a disease that attacks these individual clones. This disease is not very well understood but luckily is not wide spread at Arrowhead; although we do have some specific locations.

Aspen also are attacked by several different types of canker in the bole of the tree. The tree tends to die very slowly over many years. However, the primary concern is that the canker weakens the trees so that they are then a hazard to structures and vehicles. If you have aspen near your structures or parking areas you should contact the forest manager for assistance in identifying hazard trees.

Bill Conway

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