

ARROWHEAD

2006 FOREST HEALTH REPORT

Overview

The forests at Arrowhead have changed very little since the 2005 report. However, there are a few positive items and concerns that should be noted.

Positive observations:

1. Thinning on the common ground in Arrowhead continues. A 9 acre section of common ground was thinned this year. It is located at the end of Spruce Dr. This area was dominated by dense Douglas fir. This thinning will benefit the subdivision both from a wildfire stand point and lessen the chances of a Douglas fir bark beetle outbreak in that area. The job was completed in a timely matter, due to the diligence of the HOA in finding a reliable contractor.
2. There still continues to be an increase in the number of landowners thinning their lots. This is evident both in the appearance of the subdivision and the increasing size of the stump dump.
3. After visiting last year's confirmed Douglas fir bark beetle sites, no new infested trees were observed. The beetle was eradicated from this area due to the vigilance of the HOA and CSFS. Early identification of any insect is the key to lessening its damage. In the future, this insect will continue to periodically pop up throughout the subdivision. It is attracted to densely-stocked, over mature stands of Douglas fir. Landowners should learn the identification signs of this insect and be observant. These are listed in the concerns section below.
4. Western Spruce bud worm levels continue to be very low. A formal WSBW survey was not warranted this year. Tree thinning, prior to the next outbreak, is the best long term solution for lessening the impact of this cyclic insect.

Concerns:

1. Douglas fir bark beetle activity continues county wide. The insect is attracted to densely stocked stands of Douglas fir. The indicators of attack are red bark dust (frass) accumulating both in the furrows of the bark and at the base of the trunk. The tree will generally have masses of sap running down the stem, as well as little round masses of sap called pitch tubes attached to the trunk. The tree foliage will also show signs of fading to a greenish yellow and then brown. Infested trees should be cut down and disposed of either by cutting into firewood lengths or stripping whole logs of their bark.

2. The western balsam bark beetle is still present in the subdivision in small isolated pockets. Just like most bark beetles it is attracted to stressed trees. A tree can become stressed due to competition in an over crowded stand and from construction disturbance. A small pocket was found on the eastern end of Ute Rd. These trees were infested during last year's flight. After close inspection of the adjacent trees, no new infected trees were found. This area should be watched closely.
3. As in the past, aspen canker damage is present throughout the subdivision. These decay fungi are found in most aspen forests. During humid, wet periods such as after an afternoon thunderstorm, aspen are more susceptible to fungi infection; extra caution should be used during high moisture periods to prevent bark injuries. If pruning is needed, it should be done in the fall or spring.

General Information

The forests at arrowhead are compromised of 5 main species including: sub alpine fir, Engelmann spruce, blue spruce, aspen, and Douglas fir. Also found are Ponderosa pine and the occasional Rocky Mountain juniper.

The best way to keep a forest in good health is to manage it. In Arrowhead's case this requires thinning trees in order to lessen the competition between trees. The forests in Arrowhead are showing signs of declining health; increased insect and disease activity and slowing growth. This is due to trees becoming older (in the case of aspen, nearing the end of their life span) and the general over crowding in the forest. When too many trees compete for a limited amount of sunlight, water and nutrients, they become suppressed and weak. Weak trees are more susceptible to insects, disease and fire.

A general stocking level for a healthy forest is 140-200 trees per acre. A good portion of the forests in Arrowhead are at a density of 600-900 trees per acre. At this level both the forest health and forest aesthetics are compromised. These stocking levels are the result of years of fire suppression and lack of management.

By carefully managing the forests at Arrowhead, the subdivision can improve both the health of the forest and protect homes from the threat of wildfire. Portions of the subdivision are currently rated as an extreme fire risk, due to the densely stocked conifer forests. Small trees growing under larger trees create what is referred to as a fire ladder. A fire ladder allows a small ground fire to climb low lying limbs into the crowns of large trees. A crown fire can be fast moving, very destructive and extremely difficult to suppress. Although the HOA and CSFS have coordinated on several projects to reduce fire hazard, much work remains to be completed. A community Wildfire Protection Plan is currently being developed by CSFS and the HOA to identify where work has been completed and priorities for the future.

Insect and Disease Concerns

Western Spruce Budworm (WSBW)

The Western Spruce budworm poses the greatest long term threat to the conifer forests of Arrowhead. Although this insect feeds on the new growth of Engelmann, spruce, blue spruce, sub alpine fir and Douglas fir, it causes the most damage in Douglas fir. WSBW kills trees by slowly starving them to death over a period of several years. Moths lay WSBW eggs near the tops of trees. As the larvae mature, they feed on a trees succulent spring growth by moving between branches and trees on silken spider threads. Defoliated trees can not produce an adequate amount of food and thus become stressed. Dense stands of Douglas Fir with interlocking branches are prime habitat for the WSBW.

CSFS has monitored WSBW activity on Arrowhead since 1985. Aerial spraying to control this insect occurred several times in the 1980's. While aerial spraying is a temporary fix, tree thinning is the best long term solution. Tree thinning has the added benefit of reducing fire hazard and the threat from additional insects, such as the Douglas fir bark beetle, WSBW outbreaks are cyclic and occur every 30 years or so. Given this pattern, Arrowhead may have less than 10 years to thin trees before the next outbreak occurs. A ragged, chewed appearance to the tops of large trees and the entire crowns of smaller trees is a sign of increased WSBW activity. When WSBW infests 12% or more of a forests new growth, aerial spraying can be considered. The level of recent WSBW activity has not been over 1 or 2% for a number of years.

Western balsam fir bark beetle (WBFBB) and Douglas fir bark beetle (DFBB)

These insects will always be present in the forests of Arrowhead. Although they have not yet posed a dire threat, they have killed small pockets of scattered sub alpine fir and to a lesser extent Douglas fir through out the subdivision.

Weak, stressed trees are prime habitat for bark beetles. Healthy, fast growing trees can often defend themselves from bark beetles by exuding so much pitch, that a beetle who attempts to bore through the bark becomes trapped.

The short term solution to preventing bark beetle buildup is to fall infested trees and either cut into firewood sized blocks or strip the bark. The long term solution is tree thinning to improve overall forest health.

Other Insects

Other insects that were not identified this year in Arrowhead are spruce ips and spruce beetle. These insects are also attracted to stressed trees. Again thinning is the best defense against these insects.

Aspen Specific Problems

Cankers

Aspen are prone to canker development throughout their lives, but specifically if they are in excess of 60 years of age. Most aspen found in the forests of Arrowhead above 10 inches diameter are probably in this age group. The term “canker” describes an area of dead cambium (living cells just beneath the bark), and bark. These cankers are caused by a fungus that enters through a bark injury. Three aspen cankers currently found in Arrowhead are: sooty bark, black, and cytospora. The only way to avoid these cankers is to avoid injuring the trees. The spores that cause the cankers are always in the air and most common in the summer.

Aspen Trunk Rot

This disease is fairly common in aspen in excess of 80 years. Many large trees (12-18 inches in diameter) and some smaller ones have this disease. It attacks the inner wood core of living trees. *Fomes igniarius* is the most common in the area. Fruiting bodies of the fungus are found on the outside of the tree's bark and are hoof shaped. Trees with the hoof shaped growths are susceptible to breaking. Homeowners should examine trees near structures and have infected trees removed. Prevention includes avoiding damage during construction of structures and roads.

Aspen Decline

Aspen grows within groups of trees called a clone. Aspen clones can be as large as 100 acres in size. All trees within a clone share a common root system and each tree is genetically identical. Around 80 years of age, a clone will begin to decline in health. Cankers and trunk rot is a sign of this aging process. Conifer trees will often begin to grow under the shade provided by aspen. If the forest does not burn, these conifer trees will eventually replace the aspen forest. Aspen requires direct sunlight for growth and when shaded, aspen seedlings will die. As the aspen forests of Arrowhead decline in health, landowners will need to make a decision; let natural processes occur and allow conifer to replace the aspen or cut all trees within a patch (simulating a fire) and allow aspen to regenerate. If small patches of aspen are cut, they will need to be protected for several years with a fence to prohibit deer and elk feeding.

Conclusion

It is very important that owners and subdivision managers continue to have a proactive approach to the management of Arrowhead's forests. This includes monitoring the forest for insect problems and thinning as quickly as possible prior to the next insect outbreak or wildfire.