

January



An Insight into the Current Forestry News

Forestry



current topics >>>

Valuable news, tips and Information all geared to help forestry landowners and operators in Asotin County build a more successful operation.

For more information go to www.asotincd.org



Environmental Injury: Frost Cracks

Frost cracks are vertical splits in the bark or wood of trees that appear to occur after very severe cold winter weather.

Frost cracks, or splits in the tree trunk wood and bark, typically extend longitudinally in the center of the trunk and may appear after unusually cold winters.

Cracks appear most frequently on the south or southwest sides of young trees.

Certain species, especially those with thin bark, seem more prone to frost cracks.

These species include red maple, Norway maple, oak, sycamore, linden, horse chestnut, willow, beech, golden rain tree, Japanese snow-bell, and poplar. All young trees that have not reached their mature height and still have thin bark are also susceptible to frost cracks. Researchers in the Czech Republic found that birch trees in forest stands (trees of uniform type, age, spacing, and condition) younger than 20 years had more frost crack

Damage than trees in older stands (Kula et al. 2006). When frost cracks in plantations of eight-year-old hybrid poplar trees were

evaluated, 66% of the trees from one clone had cracks but only

16% of trees of a second clone were damaged (Diamandis and Koukos 1992). This difference

between the clones was attributed to the thicker and more wrinkled bark of the clone

Scientists do not resistably frost cracking the underlying cause of frost cracks, but all agree they are related to fluctuations in the

temperature of trunk tissues that can occur during severely cold weather. Kubler (1987) attributes frost cracks to the differential

shrinkage and expansion of wood that occurs when water moves out of moist cell walls to form ice.

Cracks appear most frequently on the south or southwest sides of young trees.

Treatment of Frost Cracks

The crack may appear to close, and callus tissue may form at the edge of the crack. The wood, however, will never seal. Once the wood fibers are split, they are split forever.



Callus, the new tissue trees produce at the edges of wounds, will grow from the wound margins and may eventually close the frost crack. In the past, some arborists would try to prevent tree cracks from enlarging or

the crack remains in the wood and is an opportune location for the entry of wood decay fungi and insects. Cracks may make the trunk wood more vulnerable to wood decay, and the tree's life span may be shortened (Kubler 1987). If there is loose bark around the wound, it can be removed to improve the appearance of the wound and remove places for insects to hide.

the trunk from outright splitting by installing rods through the trunk and bolting them on the outside of the trunk to provide support. However, this treatment is not recommended because there is no evidence that it will stop the crack. It also can lead to cracks elsewhere in the trunk and introduce decay organisms into the wood.



Prevention of Frost Cracks

Research indicates that wounds or weakened areas due to branch or root death are the start of potential frost cracks (Butin and Shigo 1981; Shigo 1986). Preventing tree wounds by protecting the trunk from mower and weed trimmer damage, removing branches with proper pruning cuts, and preventing injury to root systems will help prevent frost cracks in trees.

(<https://pubs.extension.wsu.edu/environmental-injury-frost-cracks-home-garden-series>)



Measuring the circumference

Environmental Injury: Winter Burn of Evergreens

Winter burn is a type of environmental injury that occurs on evergreen trees and shrubs. This includes needled evergreens such as arborvitae, cedar, fir, juniper, pine, spruce, and yew and broadleaf evergreens such as rhododendron, laurel, mahonia, St. Johnswort and boxwood.



On Location!

How do you calculate tree DBH? (DBH means the diameter of each tree is measured at "breast height".)

To calculate the tree's diameter, **divide the circumference by Pi, which is approximately 3.14**. In the example shown, this tree has a circumference of 41 inches and a diameter, or DBH, of 13.1 inches.

Or - make it really easy, and purchase yourself a "Spencer Tape", aka: "Logger's Tape" tool.

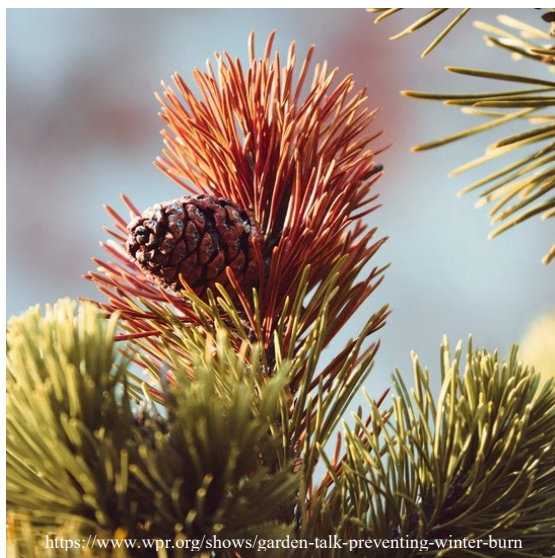
Symptoms of winter burn, also called winter desiccation, range from brown, dry needle tips or leaf edges to the reddening or browning and death of entire needles or leaves. Winter burn may not be immediately apparent when it occurs because the affected foliage may not turn brown until the weather warms in late winter or early spring. When winter burn is extremely severe, the foliage on entire branches and plants can be affected. However, winter burn damage is typically most severe on the sides of the plant more exposed to sun, wind, or both.



<http://pinesteadchristmastrees.com/blog/2014/05/06/winter-burn-in-conifers>

Cause of Winter Burn

Most needled and broadleaf evergreens retain their needles and leaves over the winter. These needles and leaves are capable of normal physiological plant processes.



Direct sunshine, reflected sunlight, and windy conditions increase the amount of water lost through transpiration and thus increase the severity of winter burn.

Evergreens predisposed to winter burn include:

- Those with a south or southwest exposure
- Those overly exposed to winter winds
- Those in dry or poorly drained soils
- Newly planted trees and shrubs that do not have a well-established root system

Winter burn occurs when the water lost through the stomata in the needles and leaves isn't replaced at the same rate. This happens when there is not adequate available soil moisture for the plant's roots to absorb, when the plant roots are not well established as with newly planted evergreens, or when the soil is frozen making it impossible for the roots to absorb moisture. Areas where water settles and submerges root systems can also lead to winter burn because the roots are unable to function without oxygen and, as a result, cannot absorb water.

Do not rush to remove injured portions of the evergreens. In some cases, only the current foliage is damaged and new healthy growth may develop from the buds on the twigs and branches the following spring. Scratch a small area of the bark with your fingernail or a pocket knife to determine if there is any green tissue underneath. If green tissue is visible, wait and see what may develop. However, once it becomes obvious what is still alive and what is not, you should remove the damaged tissues immediately with proper pruning cuts.



Prevention of Winter Burn

Proper watering of your evergreens throughout the growing season is essential to help prevent winter burn. Researchers used pyramidal, tall, hedge-type arborvitae to evaluate fall watering practices. They found that watering during summer and early fall dry periods to prevent drought stress from becoming severe was necessary to reduce the incidence of injury to this evergreen conifer (Pellett et al. 1980).

Periodically check for soil moisture during mild (above 40°F) fall and winter weather. If the soil is dry, water evergreen trees and shrubs deeply. Watering is especially important for trees and shrubs planted within the last two years that may not have well-established root

ask the experts >>>

Q: *How many different species of pine trees are there in Washington state?*

A: There are **approximately 100** different species of pines. Washington State pine trees include the lodgepole pine, whitebark pine, ponderosa pine and Western white pine. Lodgepole pines can be found in both coastal and mountain regions. Some species of lodgepole pines are shrubs.



Reliable snow cover during the winter can help protect evergreen foliage from winter burn. Foliage on the lower part of the evergreen cherry laurel shown in Figure 5 was blanketed under snow and protected while the upper portion of the plant, above the snowline, was damaged. Light, dry snow is a preferred insulator. Heavy, wet snow should be carefully removed before it weighs down and bends or breaks branches.

(<https://pubs.extension.wsu.edu/environmental-injury-winterburn-of-evergreens>)

