

## Winter Damage to Evergreens

The damage to evergreens that we are seeing this spring is "winter kill" or "winter burn." The brown spots or tips of evergreens are die-back caused by a combination of things. Winter burn results from water loss in plants during winter. During the growing season, water is absorbed and pumped from soil into the roots of plants. This lost water is quickly replaced as roots continue to absorb and pump water from soil into plants. Because evergreen woody plants retain their foliage, transpiration and loss of water continue during winter. Roots in frozen soil have no ability to replace this water and as a result, winter burn occurs as leaves desiccate, die, and turn brown.

In severe cases, buds, stem tissue, or entire plants may die. This is especially true on sunny and windy winter days when higher temperatures and wind speeds increase transpiration rates. Dehydration may be greater in plants located on the southern or western side of the house where the air is warmer due to reflected heat and light.

Salt damage can also be a problem for evergreens. Salt applied to sidewalks and roadways can also contribute to winter burn. This is especially visible among White pines located along busy highways. Salt spray from roadways lands on the needles of the evergreens and causes the winter burn. White pines appear to be the most sensitive of the evergreens to this type of damage.

Recovery of evergreens from winter kill depends on the extent of the damage. Wait until later in the spring before doing any pruning. It's possible that parts of a tree or shrubs that look dead now, might still have surviving buds. Those buds might green up and fill in the brown areas.

Prune back the dead parts of the plant if they don't green up. Branches should be pruned back to ¼" above a bud in the live portion of the plant. Following is a list of suggestions for dealing with winterkill in specific evergreens from Laura Jull, UW-Extension Woody Ornamentals Specialist.

- Evergreens with no latent (dormant) buds on stems

Evergreens that have no new growth buds along the stems will not produce any new green growth on other than at the branch tips (if they are alive). Burnt needles will not recover and only growing tips may put out green growth.

- Junipers

Prune out entire dead branches.

- Spruce

On spruce all the brown needles will fall off, with new growth only occurring from the branch tips.

- Pine, fir, Douglas fir

Pines affected by winter burn this year seem to have been damaged on only one side of the tree.

The brown needles will fall off. New needles will flush out only from the candles at the tips of the branches, if the tips are alive. Pines will hold needles for a few years, depending on the species.

White pines hold needles for a several years and some pine species may retain needles for up to fifteen years. Fir and Douglas fir will green up only from branch tips.

- Evergreens with latent buds on stems

Although winter burned leaves will fall off, evergreens with healthy existing latent buds, the growing points along the stems, will be able to grow new leaves.

- Arborvitae, yew, hemlock, boxwood

The brown needles will not recover and turn green but healthy, latent buds will flush new growth in spring. Wait for the new growth to see how far back along the stem it occurs. Prune out the dead material above the new growth. A scratch test of the stem may indicate if the stem is alive.

To prevent winter burn in the future:

- Keep evergreens properly watered throughout the entire growing season until ground freezes.
- Maintain a 3-4" layer of organic mulch around evergreens to help retain soil moisture throughout the growing season. As this mulch breaks down, it will also improve your soil's moisture holding capacity.
- Protect plants in highly exposed sites during winter with burlap, lathing, snow fencing, or other materials to prevent too much exposure to sun or wind.
- During future planting, properly place evergreens in the landscape by planting them on the eastern or northeast sides of a building. Avoid planting evergreens on the south or southwest sides of buildings or in any site with high exposure to winter sun and wind.
- Plant evergreens in spring and water them consistently throughout the growing season so that they can use the entire growing season to establish well and expand their root system and water-absorbing capacity.