

# Winter Injury on Plants

The winter of 2006-7 was a rough one for plants in the Pacific Northwest. Even while winter still continued, it was apparent that there had been winter damage— broken and bent branches, brown or blackened leaves, splitting bark, falling flower buds. What causes plants to be damaged some winters and not others? What can the gardener do with these damaged plants? How can you prevent damage in coming winters?



## What causes winter damage?

### *Weather influences include*

- Lower than normal temperatures
- Large temperature swings, such as a very mild fall followed by sudden deep freezes
- Time of year of severe cold, before the plants are hardened off or ready for cold in the fall, or in the spring after they have broken dormancy
- Drying winds
- Bright sunny days during cold spells

### *The plant itself*

- Hardiness of the plant (genetically determined)
- How well the plant is established
- Condition of the plant; dormant, partly dormant, stressed

## Types of winter damage

- Branch and flower bud damage may occur when the plant is not fully dormant or just not hardy enough to withstand the temperatures.
- Sun scald of leaves on some evergreens may occur when there is bright sunny weather combined with severe or extended cold. The leaves heat up during the day and then rapidly freeze at night, rupturing cell walls in the leaf and killing it. Often this happens on the south side of the plant. Snow cover can make this worse by reflecting more light during the day.
- Windburn damages leaves when they lose water and cannot replace it because the ground is too cold or frozen. This damage is usually seen on the side of the plant exposed to the wind. Exposure to sun can add to the problem through sun scald.
- Sun scald or frost splitting of bark is much like leaf scald, where the bark warms during the day and freezes at night, causing splitting. When there is no snow cover, the splitting may occur at the crown of the plants, killing the roots.
- Roots in above ground containers may be frozen and killed; often plants' roots are less hardy than their tops.
- Branches and limbs may be broken by heavy snowfalls or ice storms.



## **Caring for Winter Injured Plants**

Is it still alive? Before removing a damaged plant, check to see if it is still alive. You can scrape the bark with your fingernail or a small knife. If the branch is green or white under the bark, the plant is still alive. You may have to check several places on the plant to find live wood; often the outer branches may be more damaged.

- Wait until new growth begins on live wood to do anything for damaged plants.
- Prune back to healthy wood, cutting out only the damaged wood.
- Water and fertilize the plant during the growing season, making sure it is not further stressed. Mulch to maintain soil moisture.

## **To avoid winter injury in the future**

- Choose plants that are appropriate for your soil and climate conditions.
- Keep plants healthy.
- Plant broadleaf evergreen plants in areas that get winter shade and are wind protected.
- Wrap trunks of young trees with light colored tree wrap in the fall.
- Do not fertilize, prune, or water heavily late in the season to avoid stimulating lush growth that will not go dormant easily.
- Apply a loose, organic mulch around plants.
- Move plants in containers into unheated shelters. Insulate pots that cannot be moved by wrapping them in insulating materials, or burying them in soil or sawdust.

Gardening has many pitfalls, and winter damage is one of them. The best preparation is having healthy, well sited, non-stressed plants. Even then, the most experienced gardener will occasionally lose plants due to unusual weather.

