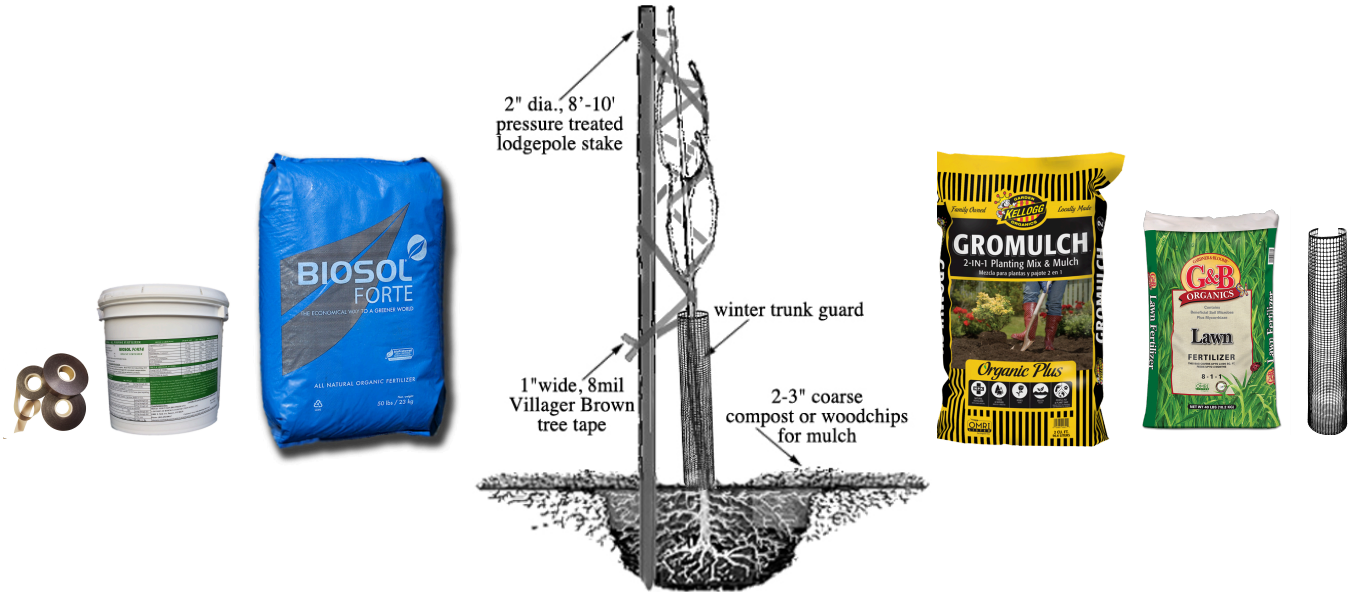

Truckee-Tahoe Tree Winterizing

•) **Improving the odds -** It is often little things we do in our gardens that increase the odds of our plants surviving and thriving. Understand: in the wild, on the dry side of the Sierras, one in a million (or far fewer) native plants ever survive from seed to maturity.

Native plants are cultured and manicured by harsh forces of nature. Wild seedlings are pruned by ice, snow, wind, and animals from their first emergence and *the overwhelming majority do not survive. Gardeners, homeowners, and landscapers don't want infinitesimally small survival rates* nor do they want to wait decades watching their landscapes struggle to survive. So we plant older, larger plants, of appropriate species, grown a little faster in milder climates. We plant them well, regularly fertilize, water, mulch, prune, train, and, *sometimes, even protect them for a few winters*.

We do not love tree wrapping and it is excessively used, but 2-3 years of helping new plants adjust to our harsh environment (so they'll survive another 20-90) saves everyone money and time and prevents disappointment.

•) **Irrigate** slowly, thoroughly and infrequently in Fall. Newly planted trees and shrubs should be watered once a week through October. Maple, Birch and Alder are particularly susceptible to drought injury in the late fall and winter. *Always send your garden into winter with moist soil.* The last deep watering is often just before Thanksgiving. Even dormant trees need water, so, **IF** we have no substantial rain or snow, *water once a month*, through the winter… especially new plantings.

•) **Fall Feeding - Biosol** organic fertilizer is the best fall application "winterizing" fertilizer we have ever used. The organic materials in **Biosol** improve our poor mineral soils and feed beneficial microbes that release nutrients for the plants. Biosol can be applied anytime in fall but we've found that late applications, before substantial snow, provide some vole deterrence especially on turf.

•) **Winter-Damage** - New growth, not sufficiently dormant, can die-back (because of late summer chemical fertilization, excessive fall water, or extreme weather). Essentially, the windows and doors of tender new tissues are not properly shut for winter. We generally recommend reducing irrigation starting early September to help plants acclimate for winter properly. When hardy plants freeze, water moves from inside the cells to the intercellular spaces. As this happens, the solutes in the cells increase and, as with salt water, the freezing temperature drops so the cells can't freeze. During periods of dry-cold, the frozen moisture between cells can sublimate away (ice to vapor in this case). Without protection, the little remaining supercooled moisture inside the cells dries up resulting in irreversible cell death by drought (much freeze damage is actually drought).

Our high elevation winter sun can damage dark-colored thin-barked deciduous trees lacking lower branches. The trunks of trees absorb the sun's heat and thaw during the day; when the sun sets, temperatures drop so rapidly that water is trapped inside the cells. That water turns to ice and the cells rupture and die. We use and recommend tree guards on most deciduous trees (the white bark of aspen and birch reflects sun so they seldom suffer).

Damage can also be caused by reflected heat, artificial warmth (from dryer vents, etc…) or when plants are simply not suited to this climate.

•) **Protecting Trunks*** - It is important to protect the trunks of young deciduous trees (other than aspen and birch) with tree guards. Polymer tree guards work well. They protect against winter sun, rodents, rabbit, and deer damage. The grid shades the trunk, allows air movement and looks good year round. Check guards annually to prevent girdling and remove when corky bark forms.

•) **Winter Protection** - We cannot protect non-hardy plants from the cold of winter with a blanket of mulch or a wrapping of cloth. Within a few hours, ambient cold will penetrate any covering. Plant mountain cold-hardy species in appropriate locations. Afternoon winter sun is one of our most damaging threats and we often choose planting locations providing afternoon winter shade.

•) **Mulch**** - Mulch is essential, even for the hardiest plants. Lay 4-5" of loose organic compost or wood-chips out well past the drip-line of every tree. Winter mulch offers the roots and the soil biology protection from sun, wind, desiccation, and from temperature swings (freeze-thaw), not from cold. Use **Gromulch, Bark Mulch, or arborist wood chips**. *Don't mulch over the original rootball.* Beyond that, no bare dirt closer than 10 feet from your tree or shrub. ***"Dig the hole two to three times as wide as the rootball and always mulch three to four times as wide as the hole."*** Mulch is just as important in summer and it provides the raw materials for maintaining soil health over the years.

•) **Antitranspirant** - Cloud-Cover and Wilt-Pruf are antitranspirant sprays that can help protect new plants, broad-leaved evergreens, and susceptible conifers from freeze-drying during the winter. We treat the entire nursery, twice, each fall, to prevent loss.

•) **Tree Staking** - (if not installed at planting) Before our soils freeze and snows fly, install one sturdy **2" x 10' treated lodgepole stake** placed just outside the rootball on the west-southwest side of your new trees (2 stakes are used in flatland high wind areas, not in snow country). Use double strands of **heavy-duty (1" x 8mil) Villager Brown tree tape** to loosely tie the trunk of the tree to the stake in 2 or 3 places. Use loose figure eights and trim excess. We use stakes to support trees properly until they produce enough strong wood to support themselves. Strong trunks are promoted by summer movement. Duration of staking depends on the species and the planting location.

•) **Tree Wrapping** - In fall, **after** the leaves have fallen from your more brittle or vulnerable new trees and shrubs, tie them up for the winter. Wrap the tree tightly with **heavy-duty tree tape**. Tie the tree tape to the stake below the lowest branch, then wrap-up the tree tightly, to itself, pulling in branches as close as possible, up to the height of potential deep snow, tie-off, then wrap down the tree and the stake, pulling the wrapped tree tightly to the one stake.

We do not recommend wrapping trees for more than 2-3 years but some locations require tying much longer (next to driveways, roof-sheds, etc…).

In extreme snow load areas, and with young conifers, an extra bamboo stake can be tied up the center of the tree (temporarily) to splint the leader for the first few winters.

The above ground portions of cold-hardy trees and shrubs are not growing in winter. The cells are alive in a dormant state and energy is stored in the stems and trunk, but even small pruning cuts made in fall won't seal over until early spring because they are "asleep." Virtually ALL of a tree's energy is underground in fall and winter when root systems are actively growing and expanding. **There is no damage whatsoever to shrubs or trees when they are tied for winter, when necessary.**

•) **Pruning***** - Remove dead wood, broken branches, and correct any severe structural faults such as low hanging or leggy branches that will break in the snow now. (leave all lower branches).

Perform structural pruning in late-winter / early-spring and hedging in summer. *Pruning the first few years will create a dense habit in shrubs and stout branches, strong branch shoulders, and well tapered trees better adapted to heavy snow loads without tying.* With virtually all of a plant's metabolism engaged in root expansion, fall pruning cuts don't begin to seal until late spring (imagine you cut off your hand in November and have-to wait until April until it starts healing). Plants don't heal, but when actively growing, they do seal pruning wounds rapidly. Pruning cuts made in fall often die back and offer easy entry for disease-causing organisms. See: Young Tree Training Que Card

•) **Untying Trees & Shrubs**- Early May is a common time for local gardeners to begin removing the tree tape. Use care when untying your trees and shrubs that may have begun to grow so as not to knock off any buds.

Villager nursery inc.
Helping Mountain Gardens Thrive Since 1975
10678 Donner Pass Road
Truckee, California
530.587.0771

***Protecting Trunks from Winter Sun** - Tree guards are vital for trees with smooth dark "skin" when they are young, before bark begins to form. Maple, apple, hawthorne, golden chain, pear, cherry, and some oaks and buckeye are all naturally bushy, with many low branches in their youth. Nurseries remove the lower branches from young trees so they look, to consumers' eyes, like trees (and not tall shrubs).

Tree guards shade or reflect the sun to prevent warming and thawing of trunk tissue by afternoon winter. In warming trunk tissues, cells fill with water. When the sun drops in our dry winter nights, temperatures plummet and water trapped in the cells can freeze and rupture the cells.

****Mulch / Wood Chips**: Arborist wood chips (over a light layer of gromulch) are a favorite mulch. The fact that they are free and often delivered right to your home is a huge bonus.

In the Sierras, most of our organic decay, out in the woods, meadows, and shrub-lands, occurs in winter, under snow, by fungi. That's when saprophytic and mycorrhizal fungi are actively digesting leaves, needles, cones, twigs, branches, and logs. If you dig down through snow to the even nearly frozen soil interface, in the middle of winter, there is supple active white fungal hyphae happily colonizing all of the organic matter.

Arborist wood chips often contain pine-needles and leaves and, to some, this is unsightly. I consider the green bits a benefit because nitrogen (in the green bits) feeds more of the microorganisms that speed the decay, composting, and conversion of the carbon-rich woody mulch into humus, which improves our soils in myriad miraculous ways.

The BEST time to apply woody mulch is anytime you have it; but, applied before winter, it will be colonized by fungi and be actively composed by spring. The results are not only great for the soils, roots, and plants but the winter-composted mulch becomes nearly fire retardant. Thicker layers of mulch, 5-6", hold more moisture, support more fire-retardant fungal growth and improve the soils more quickly.

We always say the biggest benefit of bark mulch is that it is slow to decay (it lasts longer). The biggest detraction of bark mulch is that it is slow to decay (it does little to improve the soil). Bark mulch remains flammable for many years. Click here for link: "Composted wood chips demonstrated the least hazardous fire behavior and would be the best choice for use in landscapes".

****Pruning cuts made in fall don't seal over** until spring and *there is usually desiccation, infection, necrosis, and die-back from fall pruning*. For most woody plants, the best time to prune, physiologically, is in late winter. Cuts made in late winter or very early spring, before new growth begins, will produce growth from the buds adjacent to the cuts whereas fall cuts will be dead to several inches and many buds below the cuts.

There are a few woody shrubs whose recommended pruning time is just after they flower. Lilac and cranberry viburnum are among these. Because they initiate next-year's flower buds by mid-summer, any pruning done in late summer or spring, will remove flower buds. (I have found that if I wait until mid-summer, when the shrubs are dense with foliage, it is far more difficult to prune and since the best time to prune these shrubs, from an overall plant-health perspective, is late winter… that is when I prune mine and miss the blooms for a season.

"Never" and "always" are seldom appropriate adverbs for gardening. The realities of your life, your timing, or your landscape style may preclude the "best practices" but it seldom means the death of your garden. Once established, mountain-hardy plants are pretty dang resilient.