



# Trees for Mountain Communities

## Quick Facts...

- Trees are the most restricted of all higher elevation plants. Establishing trees often is difficult.
- Plant trees in the spring as soon as the soil can be worked.
- Root re-growth is the most important factor in establishing transplanted stock.
- Wrap trunks of thin-barked trees with commercial tree wrap for two growing seasons.
- Check soil for adequate drainage and water-holding capacity. If necessary, correct before planting.

Of all the plants that can be grown at higher elevations, trees are the most restricted. A survey of 66 mountain communities in Colorado showed that, with the exception of a few native trees, only three non-indigenous species (not native to the area) were found thriving above 9,000 feet. Of these, two (pinon pine and Rocky Mountain juniper) are actually native but are considered to be above their natural range. The third, green ash, was not reliably hardy above 8,500 feet except in protected locations.

The dividing line for a wide variety of trees seems to be at or near 8,500 feet. Above this elevation, consider locally native species as the primary source of trees. The following lists include trees considered reliably hardy for various elevations above 6,000 feet.

## Establishment

Even if a given tree is known to survive in a particular location, getting a transplanted one established often is difficult, particularly where the growing season is less than 80 days. The following suggestions can help ensure tree survival.

Plant trees as early in the spring as the soil can be worked. Avoid fall planting.

Re-growth of roots is the most important factor in establishing transplanted stock. Extend the root growing season with a 4- to 6-inch mulch of pine needles, wood chips or other loose, organic material before the ground freezes in the fall. The mulch, however, may slow soil warming in spring. Remove it in early spring unless snow cover prevents this.

Snow cover also can serve as an excellent mulch, allowing root growth to occur even during some periods of the winter. Encourage snow to drift over the root zone of young plants by using temporary snow fences or evergreen boughs in appropriate locations. Exact location of fences varies from one site to another, and some trial-and-error placements may be necessary.

In general, snow accumulates best around a tree if the barrier is placed on the leeward side. An additional fence can be placed on the windward side but should be located some distance away. The distance depends on the wind velocity and height of the barrier. The stronger the wind during a snow storm, the farther away the snow barrier should be.

Wrap trunks of young, thin-barked trees (non-evergreen types) with a commercial tree wrap in the fall. Wrap from the base up to the first or second main branch. Remove the wrap in spring. Before planting, check soil for adequate drainage and water-holding capacity. Many mountain soils are formed from decomposed granite and may be almost devoid of organic matter. Add peat or compost to improve the water-holding capacity. A soil test may assist in determining nutritional needs. Consult your local Colorado State University Cooperative Extension county office for soil test information.

When purchasing trees from a nursery, find out where the stock was grown. Stock originating from southern and Pacific Coast sources may be less hardy even though it is sold under the same name as stock from northern nurseries. Where possible, select nursery stock originating from northern areas.

**Table 1: Trees hardy at least up to 10,500 feet elevation.**

<b>Evergreen</b>	
<i>Abies lasiocarpa</i> Subalpine fir	Native. A timberline tree. Needs good drainage but not on hot, dry slopes.
<i>Juniperus scopulorum</i> Rocky Mountain juniper	Native. May not perform well above 9,500 feet. Tolerates dry slopes after establishment.
<i>Picea engelmanni</i> Engelmann spruce	Native. Grows to timberline. Will tolerate wet soils such as along streams and springs.
<i>Picea pungens</i> Colorado spruce	Native. May not perform well above 9,500 feet. Tolerates wet stream sides and seepage from springs.
<i>Pinus aristata</i> Bristlecone pine	Native. Soil must be well drained.
<i>Pinus contorta latifolia</i> Lodgepole pine	Native. Best placed in well-drained soils up to 10,000 feet.
<i>Pinus flexilis</i> Limber pine	Native. Use in well-drained soils. Tolerates dry, rocky hilltops, once established.

**Table 2: Trees hardy at least up to 10,000 feet elevation.\***

<b>Deciduous</b>	
<i>Alnus tenuifolia</i> Thin-leaf alder	Native. Often shrubby but can be trained to small tree or tree-clump effect.
<i>Populus acuminata</i> Waxleaf cottonwood	Native. For soils that stay moist.
<i>Populus angustifolia</i> Narrowleaf cottonwood	Native. Best used where there is soil that stays moist. Narrow leaves resemble willow.
<i>Populus balsamifera</i> Balsam poplar	Native. Foliage handsome, thick-textured. Moist soils.
<i>Populus candicans</i> White poplar	Native. Foliage nearly heart-shaped. Upper bark a showy, smooth gray. Moist soils.
<i>Populus tremuloides</i> Quaking aspen	Native. Best where soil stays moist. Sites having at least 9 inches of rich, mountain soil are best.
*Includes also all trees listed for higher elevations.	

**Table 3: Trees hardy at least up to 8,500 feet elevation.\***

<b>Deciduous</b>	
<i>Acer negundo</i> Box elder	Native. Best in protected gullies and canyons at higher elevation ranges. Subject to limb breakage during heavy snows.
<i>Betula pendula</i> European white birch	Use where soils will stay moist in top 18 inches.
<i>Fraxinus pennsylvanica lanceolata</i> Green ash	Avoid hot, dry, south slopes.
<i>Malus adstringens</i> Hopa crab	Some protection may be needed at elevations over 8,000 feet.
<i>Malus domestica</i> Domestic apple	Fruit rare where there are fewer than 90 frost-free days. Early transparent and similar summer varieties are most likely to succeed.
<i>Prunus virginiana</i> 'Shubert' Shubert chokecherry	Foliage changes from green to purple. A small tree or large, multitrunked shrub.
<i>Ulmus pumila</i> Siberian elm	Seems to thrive in all but very hot sites.

**Table 4: Trees hardy at least up to 7,500 feet elevation.\***

<b>Deciduous</b>	
<i>Acer platanoides</i> Norway maple	Slow growing. Needs protected sites.
<i>Acer saccharum</i> Sugar maple	Best used in rich, mountain soils. North or west exposure.
<i>Acer saccharinum</i> Silver maple	Best used in rich, mountain soils.
<i>Crataegus mollis</i> Downy hawthorn	Other species, including the native <i>C. monogyna</i> , are hardy to 8,000 feet.
<i>Gleditsia triacanthos inermis</i> Thornless honeylocust	Protect bark from sun scald (with shade or tree wrap) for at least two years after planting.
<i>Populus alba</i> 'Bolleana' Bolleana poplar	Stiffly upright tree with whitish lower leaf surfaces and gray-green bark.
<i>Populus nigra</i> 'Italica' Lombardy poplar	Much like 'Bolleana' in growth habit but foliage is deep green. Short lived.
<i>Prunus armeniaca</i> Apricot	May not consistently fruit where growing season is less than 80 days.
<i>Prunus cerasus</i> Sour cherry	Varieties Montmorency, Meteor, North Star and Early Richmond are reliable for fruit.
<i>Prunus domestica</i> Plum	The Italian prune varieties, such as Green Gage, are reliable for fruit.
<i>Prunus blireiana</i> 'Newport' Newport purpleleaf plum	May be marginal at 7,500 feet in some areas.
<i>Rhus typhina</i> Staghorn sumac	Often more shrub-like at higher elevations. Dry slopes.
<i>Robina pseudoacacia</i> Black locust	Best with some protection from winds.
<i>Sorbus aucuparia</i> European mountain ash	Red-orange fruit may not mature where growing season is less than 80 days.
<b>Evergreen</b>	
<i>Abies concolor</i> Concolor fir	Occasionally found above 8,500 feet elevation but more reliable at lower elevations. Well-drained soils with consistent moisture.
<i>Picea glauca</i> 'Densata' Black Hills spruce	May be hardy above 7,500 feet. Moist sites.
<i>Pinus edulis</i> Pinyon pine	Tolerates dry, south slopes once established.
<i>Pinus nigra</i> Austrian pine	Needs some protection from winds. Well-drained soils.
<i>Thuja occidentalis</i> Western arborvitae	Needs protection from drying, cold winter winds.
*Includes also all trees listed for higher elevations.	