COLORADO STATE UNIVERSITY
EXTENSION

Native Trees for Colorado Landscapes

Fact Sheet No. **7.421** Gardening Series | **Trees and Shrubs**

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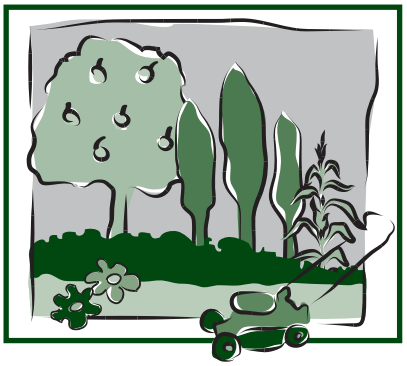

Why Grow Native Trees?

There are many benefits to using Colorado native trees for home and commercial landscapes. Colorado native trees are naturally adapted to their specific Colorado climate, soil, and environmental conditions. When correctly sited, they can be ideal plants for a sustainable landscape that requires reduced external inputs such as watering, fertilizing, and pruning. In order to realize these benefits, the planting site must approximate the natural environmental conditions of the plant in its native habitat.

Another benefit of using Colorado native trees in landscapes is that they attract a wide variety of wildlife including mammals, birds, and butterflies. Rapid urbanization in the state is reducing biodiversity as habitat is removed for building and road construction. Landscaping with natives on a large or small scale can maintain biodiversity that otherwise could be lost to development.

The trees listed in Table 1 are grown by some Colorado nurseries and are becoming more available in the commercial sector. However, not all trees listed are available at all nurseries, so you may need to contact several commercial outlets to find a specific plant. If a tree is not sold in the trade, asking for it may help increase its availability. Native trees should not be collected from the wild because this reduces the biodiversity and causes a disturbed area that may be invaded by weeds.

Most of the trees listed in Table 1 are available as container-grown plants. Native trees often do not have as great a visual impact in the container or immediately after planting as do traditional horticultural species. Over time, they reward the homeowner with their natural beauty and other benefits.

Where to Grow Native Trees

There are several factors to consider when designing a native landscape. Due to Colorado's variation of elevation and topography, native plants are found in many habitats. In order to maximize survival with minimal external inputs, trees should be selected to match the site's life zone and the plant's moisture, light, and soil requirements. Even if a plant is listed for a particular life zone, the aspect (north, south, east, or west facing) of the proposed site should match the moisture requirement. For example, a Colorado blue spruce, which has a high moisture requirement, should

Figure 1: Ponderosa pine cones (*Pinus ponderosa*)

Figure 2: Alder fruit (*Alnus tenuifolia*)

Quick Facts

- A Colorado native tree can be described as existing in Colorado prior to European settlement.
- Native plant communities make Colorado visually distinct from the eastern, southern or western United States.
- Native plant gardens are wildlife habitats and each plant contributes to the biodiversity of the state.
- Landscaping with natives on a large or small scale can maintain biodiversity that otherwise would be lost to development.

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Figure 3: Ponderosa pine (*Pinus ponderosa*)

Figure 4: Bristlecone pine *(Pinus aristata)*

Figure 5: Douglas-fir cone (*Pseudotsuga menziesii)*

not be sited with plants of dissimilar water needs. Similarly, a Colorado blue spruce should not be planted on a south-facing slope, where a significant amount of additional moisture would be required.

Growing native trees does not exclude the use of adapted non-native plants. There are many non-native plants that are adapted to Colorado's climate and can be used in a native landscape as long as moisture, light, and soil requirements are similar. If a site has a non-native landscape that requires additional inputs (such as an irrigated landscape on the plains), dry land native plants can be used in non-irrigated pockets within the non-native landscape. These native "pocket gardens" can be located in areas such as parkways and next to hardscapes that are difficult to irrigate.

Some communities regulate landscape appearance or the type of plants that may be used. So before completing a landscape design, check with local authorities, including homeowner's associations, to discover any regulations that may affect your design.

Life Zones of Colorado

Colorado can be divided into five life zones that are broadly defined by the plant communities that occur at the approximate elevations described below. The Plains life zone, 3,500 to 5,500 feet, is located in eastern Colorado where the majority of Colorado's population resides. It is dominated by grasslands and streamside cottonwoods. In western Colorado, the Upper Sonoran life zone is located at altitudes below 7,000 feet, and in the San Luis Valley, below 8,000 feet. This zone is characterized by semi desert shrublands and piñon pine-juniper woodlands at its upper limit.

The Foothills life zone occurs from 5,500 to 8,000 feet and is dominated by dry land shrubs such as Gambel oak and mountain-mahogany, and in southern and western Colorado, piñon-juniper woodlands and sagebrush. The Montane zone consists of ponderosa pine, Douglas-fir, lodgepole pine, and aspen woodlands at elevations of 8,000 to 9,500 feet. Dense forests of subalpine fir and Engelmann spruce dominate the Subalpine zone at 9,500 to 11,500 feet. The Alpine zone above 11,500 feet is a treeless zone made up of grasslands called tundra. Species

Figure 6: Douglas-fir (*Pseudotsuga menziesii)*

Figure 7: Gambel oak (*Quercus gambelii)*

requiring medium to high moisture occur along watercourses throughout all zones.

Culture and Maintenance

Successful establishment of native trees may require supplemental moisture after planting. Once established, the watering frequency can be reduced or eliminated, if the plant was sited in its native environmental conditions. Container-grown trees can be planted at any time during the growing season. Container-grown native trees are often grown in a soilless mixture of peat and bark, so the planting site should be amended with some organic material. Another option would be to carefully wash off the media from the container grown plant and plant it bare root.

Using native trees offers many benefits in addition to reduced maintenance. Natives are part of our natural heritage and the ecosystems of Colorado. Native plant communities make Colorado visually distinct from the eastern, southern, or western United States. Native plant gardens are wildlife habitats and each plant contributes to the biodiversity of the state.

Table 1. Native trees for Colorado landscapes.

Scientific Name[1]	Common Name(s)	Planting Altitude in feet[2]	Native Colorado Life Zone[3]	Moisture[4]	Evergreen/ Deciduous	Comments[5]
Large trees (45+ ft when mature)						
Abies concolor	white fir, concolor fir	4,000 - 10,000	Foothills - Montane	M - H	E	Symmetrical, pyramidal shape; for large landscapes; attractive, soft, blue-green needles; grows best where protected from wind.
Abies lasiocarpa arizonica	corkbark fir, subalpine fir	7,000 - 11,000	Montane - Subalpine	M - H	E	Narrow, pyramidal habit; blue-green needles; corky, white bark; less commonly available; potential for use at lower elevations.
Acer negundo	boxelder	4,500 - 7,500	Plains - Foothills, Upper Sonoran	M - H	D	Maple with compound leaves; found along streams; rapid grower; weak-wooded; short-lived; female trees attract nuisance boxelder bugs.
Picea engelmannii	Engelmann spruce	5,000 - 11,000	Montane - Subalpine	M - H	E	Large, densely pyramidal tree with blue-green needles and reddish, scaly bark when mature; found at high elevations with subalpine fir where it performs best; less commonly available.
Picea pungens	Colorado spruce	4,000 - 9,500	Foothills - Montane	M - H	E	Colorado state tree; sharp, stiff needles ranging from green to silvery-blue; horizontal branching.
Pinus contorta latifolia	lodgepole pine	6,000 - 11,000	Montane - Subalpine	M	E	Light green needles; persistent cones; tall, narrow form in native habitat; broader habit in landscape site; requires well-drained soils.
Pinus flexilis	limber pine	4,000 -10,000	Montane - Subalpine	L - M	E	Green to blue-green needles in bundles of 4-5; flexible twigs; larger, ornamental cones.
Pinus ponderosa	ponderosa pine	4,000 - 9,000	Foothills - Montane	L - M	E	Longer, yellow-green needles; bark has vanilla fragrance on warm days; turns cinnamon color with age.
Pinus strobiformis	Southwestern white pine	4,000 - 8,500	Foothills - Montane	L - M	E	Blue-green needles; large cones; scaly bark when mature; faster-growing; less commonly available.
Populus angustifolia	narrowleaf cottonwood	4,000 - 9,500	Foothills - Montane	H	D	Vertical growth habit; willow-like leaves; suckers heavily; best in natural areas along streams; males do not produce cotton; yellow fall color.
Populus sargentii	Plains cottonwood	4,000 - 7,000	Plains - Foothills, Upper Sonoran	H	D	Fast-growing; broad, irregular canopy; triangular leaves; males do not produce cotton.
Populus x acuminata	lanceleaf cottonwood	4,500 - 8,500	Foothills	H	D	Fast-growing; upright, rounded, dense branching; spear-shaped, drooping leaves; less suckering; natural hybrid between Plains and narrowleaf cotton-woods; males do not produce cotton.
Pseudotsuga menziesii	Douglas-fir	4,500 - 11,000	Foothills - Montane	M	E	Fast-growing; soft, medium to dark green needles; pyramidal shape; unique cones; alternate host for gall insects on spruce.
Small - Medium Trees (10 - 45 ft when mature)						
Acer grandidentatum	bigtooth maple, Wasatch maple	4,500 -7,000	Foothills - Montane[3a]	L - M	D	Native to southwest, with occurrences in Montezuma County; often multi-stem form; degree of orange-red fall color varies.
Alnus tenuifolia	thinleaf alder	5,000 - 10,000	Foothills - Subalpine	H	D	Large shrub or small tree; often multi-stemmed; yellow fall color not reliable; persistent fruits resemble miniature pine cones; found along streams; gray bark; sun to part shade.
Betula occidentalis (Betula fontanalis)	Western water birch, Rocky Mountain birch	5,000 - 9,000	Foothills - Montane	H D		Small tree or large shrub; bronze-red bark; found along streams, often with thinleaf alder; yellow fall color; requires additional moisture in dry winters.
Juniperus monosperma	oneseed juniper	4,000 - 7,500	Plains - Foothills[3b]	L	E	Multi-stemmed tree with small, scale-like leaves; found on dry rocky slopes, often with piñon.
Juniperus osteosperma	Utah juniper	5,000 - 9,000	Upper Sonoran - Foothills[3a]	L	E	Spreading, multi-stemmed tree with small, scale-like leaves; large, grayish-blue, berry-like fruits are important food for small mammals and birds.

Table 1 (cont.). Native trees for Colorado landscapes.

Scientific Name[1]	Common Name(s)	Planting Altitude in feet[2]	Native Colorado Life Zone[3]	Moisture[4]	Evergreen/ Deciduous	Comments[5]
Small - Medium Trees (10 - 45 ft when mature)						
Juniperus scopulorum	Rocky Mountain juniper	4,000 - 8,000	Foothills - Montane	L	E	Variable growth habit, often upright to columnar; male and female flowers on separate plants; found on dry mountain slopes and mesas; berry-like fruits are important food for small mammals and birds.
Pinus aristata	bristlecone pine	5,000 - 11,000	Montane - Subalpine	L - M	E	Rounded to pyramidal shape; branches have bottlebrush appearance; short, dark green needles with specks of white resin; spiny cones; needs well-drained soil; slow-growing.
Pinus edulis	piñon, pinyon pine	4,000 - 7,500	Foothills - Montane, Upper Sonoran	L	E	Compact, bushy tree with grayish-green needles in bundles of two; small rounded cones; edible seeds develop when planted in grove for cross-pollination; best in dry, well-drained site.
Populus tremuloides	quaking aspen	4,000 - 10,000	Foothills - Subalpine	H	D	Leaves flutter in slight breeze; short-lived, suckers; best in well-drained mountain soils.
Quercus gambelii	Gambel oak, scrub oak	4,000 - 8,500	Foothills - Montane	L - M	D	Shades of red, orange, yellow, and brown in fall; acorns provide excellent wildlife food.
Salix amygdaloides	peachleaf willow	3,500 - 7,000	Plains - Foothills, Upper Sonoran	H	D	Fast-growing; lance-shaped leaves; new twig growth orange-yellow; ascending branches; found along streams.

[1] As commonly sold in the trade. For equivalents, see botanical publications.

[2] Planting altitudes are estimates of where plants may be successfully grown as landscape plants. In many cases, species may be successfully planted at a lower zone with supplemental irrigation or a higher zone with protection.

[3] Approximate life zone elevations: Plains - below 5,500 ft. in eastern CO; Upper Sonoran - below 7,000 ft. in western CO and below 8,000 ft. in San Luis Valley; Foothills - 5,500 - 8,000 ft.; Montane - 8,000 - 9,500 ft.; Subalpine - 9,500 - 11,500 ft.; Alpine - above 11,500 ft. Species requiring medium to high moisture occur along watercourses throughout all zones. For simplicity, life zones were taken from *Grassland to Glacier* by Mutel and Emerick, first edition, 1984. For a more detailed treatment of Colorado ecosystems, see second edition, 1992.

[3a] Native to Western Slope; [3b] Native to Eastern Slope

[4] Moisture Requirement: L - Low, M - Moderate, H - High

[5] Except where noted, plants prefer full sun.