

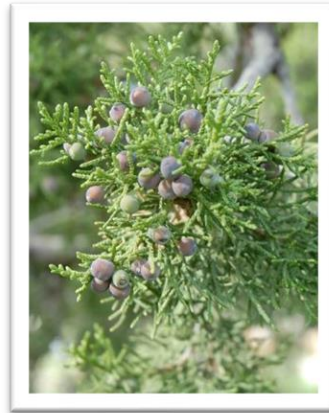


NATIVE PLANTS, NATURAL LANDSCAPES

WILD ONES FRONT RANGE CHAPTER



Rocky Mountain Juniper



NATIVE TREES FOR COLORADO'S FRONT RANGE

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Most people believe that, historically, there were not a lot of trees on the plains of Colorado before Europeans settled here. It was a shortgrass prairie ecosystem. There were Cottonwoods in the riparian areas, scrub oaks, Ponderosa pines and Aspens in the sub-alpine areas, and other conifers in the mountains (e.g., the gnarly beautiful Bristlecone pines). However, there is a school of thought that says the Front Range was not historically short grass prairie. There is some acknowledgement that Native Americans manipulated a forested landscape for many years (*See the book [1491](#) by*

Charles C. Mann). So, whether the Front Range was historically short-grass prairie or forest is an open question, but there do not appear to be many true native trees.

There is also the question of whether we should be populating the Front Range with trees in the 21st century. The High Plains was shortgrass prairie when the first European settlers came in, and it is estimated we have something like 3 percent of that short grass prairie remaining in the western United States. Some research shows that native shortgrass prairie plants are just as good, if not better, than trees, at sequestering carbon, just one of the many ecological benefits of these plants. And, trees are both quite vulnerable to the ravages of climate change yet quite important to mitigating the impacts of climate change. So, keep all these things in mind as you decide whether to plant trees, or which trees to plant.

Do trees benefit the ecosystem, given the water required to maintain a tree canopy in this semi-arid part of the country, predicted to get even drier? The answer is that, on balance, assuming you select trees that do not require a lot of water, trees give back to the ecosystem way more than they take. The City of Denver estimates that the 2.2 million trees in Denver provide \$122 million in environmental services (e.g., soil quality improvement and nutrient cycling). In terms of cooling, they provide \$6.8 million in benefits (cooling the city by 5 degrees in the summer); and \$1.4 billion in stormwater services. That does not include the CO2 reduction trees provide, wildlife benefits, microclimates that make it easier to grow other plants, and the reduction in the air pollutants that kill thousands of us each year. There are significant economic benefits as well that are not relevant here.

The bottom line appears to be that it is good to plant trees in the Front Range, preferably natives or near natives. The shade they provide, alone, is worth the water cost. We also need native plants to host the native insects to feed the birds. That's it in a very oversimplified nutshell. Caterpillars are a critical food source for over 96 percent of songbirds (e.g., a pair of Carolina chickadees requires between 6,000 and 9,000 caterpillars to successfully raise just one brood of young). The power of native plants is their ability to host many more species of caterpillars than non-native plants. So, below, with many of the tree species, we will use the National Wildlife Federation's (NWF) Native Plant Finder* to let you know how valuable these trees can be for caterpillars. Planting a diversity of trees helps to keep the urban tree canopy resilient in the face of threats to tree health. The present tree canopy in Denver is dominated by Maple and Ash trees, and we all probably know what's happening to them. Denver is poised to lose something like 330,000 Ash trees due to the Emerald Ash borer in the near future. And our big silver maples all seem to have been planted at the same time, so they will reach the end of their life span together. We will lose yet another huge chunk of our tree canopy all at once. While tempting to find a "good option" and stick with it, it's not a great idea to pick one of these tree species and plant 20 of them. Pick a few different trees, if you have the room, and research them well before buying (we are giving you just a snippet of information here on each tree). A common resiliency rule of thumb among municipal forestry departments is to have no more than 10% of the tree canopy made up of any one genus of tree. .

Also bear in mind that trees are expensive to maintain. Regular pruning is recommended, and that can be costly once the tree gets big. And taking down a tree that no longer serves its purpose is very expensive. So, if carbon sequestration and wildlife benefits are your goal, and cost is an obstacle, consider a native prairie instead.

Here are a few trees (some are a bit shrub like, but we'll call them trees for these purposes) we'd recommend:

Chokecherry (*Prunus virginiana*): more of an understory, small tree, chokecherry can grow to be 20-30 feet tall, and often forms thickets (although the Sucker Punch cultivar does not "sucker."). It has dense clusters of white flowers in the spring followed by red fruit in the late summer. The berries are edible but extremely "puckery" (we made that word up, but you get the idea), good for jams and preserves, but the birds love them just the way they are! The berries are an important food source for wildlife in July and August. It hosts **227 species of caterpillars**.

Gambel Oak (*Quercus gambelii*): Oaks are sturdy trees, incredibly important to wildlife. In fact Doug Tallamy has written an entire book on oaks, which [Wild Ones has highlighted](#) and their importance in the ecosystem. Most, if not all, of Tallamy's research is in the eastern U.S., but we still think every landscape should have at least one oak tree. The gambel oak (also known as scrub oak) selection 'Gila Monster' is highly recommended by tree experts in the area. In the wild, it grows among Ponderosa pines, pinon pines and junipers. It is also the larval host for Colorado's State butterfly, the hairstreak butterfly. The Forest Service wrote [an article](#) on bird communities supported by the Gambel Oak, which may be of interest to you.

Rocky Mountain Juniper (*Juniperus scopulorum*): sometimes called Colorado Red Cedar, this medium tree grows to 10-20 feet tall in the wild. It's a tough tree – it can grow in dry, tough conditions, and can be found up to 8,900 feet altitude. It hosts **44 species of caterpillars**. *Skyrocket* juniper is a cultivar that has been overtaking the native in landscapes. Be sure to get the native, as the cultivar will not support wildlife as well. [Note that Junipers are not recommended near a home in a fire-prone area. They are super flammable.]

Maple, Box Elder (*Acer negundo*): A species of maple that is similar to an ash or an elder, hence the common name of Maple ash and Box elder, it hosts **140 caterpillar species**. It can grow to be 35-80 feet tall, has yellow color in the fall, and small yellow-green flowers in the spring. These trees require a bit more water than a xeriscape landscape usually provides, but can be worth it for the wildlife value.

Mountain Mahogany (*Cercocarpus montanus*): A small, slow-growing tree, reaching 9 to 18 feet tall. They are nitrogen-fixing, meaning the roots of this tree are colonized by certain bacteria that extract nitrogen from the air and convert it into a form required for growth. Nitrogen is vital for plant success. This ability to fix nitrogen not only supports this tree, but other trees and plants around it. It also hosts **19 caterpillar species**, and is

very long lived. The flowers appear red when they first open, but are yellow when fully expanded. It has a rather exotic-looking growth habit. It looks very shrub-like when young, but grows to be upright and tree-like as it ages. It does quite well in very dry, rocky environments.

Ponderosa Pine (*Pinus ponderosa*): I think of this as the quintessential Front Range tree. It hosts **202 caterpillar species**. It is a very large tree, the tallest known ponderosa clocking in at 268 feet tall! I guarantee (!) that in your landscape it will not grow to be anywhere near that tall (those very tall ones are in California), but this tree should be reserved for large areas

Quaking aspen (*Populus tremuloides*): A beautiful, but short-lived tree in your garden, this tree does require more water than most trees we recommend. An important wildlife plant, it hosts a variety of insects. It gets fairly tall and will spread through root sprouts.

Serviceberry: (*Amelanchier alnifolia*, among other native species) or Juneberry as they are commonly known. The best native tree or bush for four-season interest. They do not take up much room and they are fabulous for wildlife. The NWF native plant finder estimates the Serviceberry hosts **81 caterpillar species**. They have clusters of white flowers in spring, blue/black berries attractive to wildlife in the fall, and orange to red fall color. This plant may require supplemental water and might not do well in basic soils.

Willow (*Salix*): The king of these natives when it comes to hosting caterpillar species, this tree, or large bush, hosts an astounding **322 species of caterpillars!!** It is the top host plant in our area. However, it's a thirsty tree, and it likes moist, organic-rich soils. In the wild, willows are often found growing near wetland or in riparian areas. Because they are quick growers, they tend to be weak-wooded and messy, dropping twigs. Probably not the "specimen tree" for the property, but lovely in the right spot.

And here are some "not quite natives" that are also recommended, because they either provide ecosystem or other benefits, for example, they are so drought tolerant that they will do well on the Front Range, and they are beautiful.

Chinkapin oak (*Quercus muehlenbergii*): Oaks can grow really well in our environment; they seem to be well adapted to our soils. They withstand some mean storms, and are long-lived trees. This oak is known for its sweet and palatable acorns, which birds, and in particular hummingbirds, and other wildlife seem happy to eat.

Hackberry (*Celtis occidentalis*): This is one tough tree. It grows to be very large, so great for areas you'd like to shade, and yet very drought tolerant. It leafs out fairly late in the spring, so also a great choice if you want to grow spring bulbs and flowers underneath it. See also Netleaf Hackberry (*Celtis reticulata*), also a native tree and a good choice, with finer leaves.

Piñon Pine (*Pinus monophylla, edulis, cembroides*): These are small, bushy evergreen trees, sometimes wider than they are tall. The piñon jay takes its name from the tree, with pine nuts being an important part of its diet. Pine nuts have been an important source of food for Native Americans living in the American Southwest. It is a slow-growing tree, but important for wildlife, very drought-tolerant, and seems to influence the soil in which it grows by increasing concentrations of both macronutrients and micronutrients.

Russian Hawthorne (*Crataegus ambigua*): is a small, beautiful, drought-tolerant tree. Its main reasons for inclusion here are that it is an extremely low water user, has an interesting habit, and gorgeous red berries in the fall. It's a show-stopper at the Denver Botanic Gardens when those red berries come out. In 2011 Plant Select** chose Russian Hawthorne as one of their selections. These trees tend to "do their own thing" in terms of habit, in other words, they can get gnarly and can often be as wide as they are tall (12-24 feet tall, and 6-12 feet wide), though can be pruned to maintain shape. The blossoms attract a wide range of flies and bees in early summer. After several frosts, the fruit turns sweet and is sought after by larger songbirds. The thorns on the tree also offer small birds and mammals protection from larger predators.

Sugar Maple 'Fall Fiesta' (*Acer saccharum* 'Fall Fiesta'): Chatfield farms is experimenting with this cultivar. It has been singled out as a great tree, despite not being a native, because of its vigorous and rapid growth, good resistance to heat, wind and drought, and gorgeous orange and red fall color. It's a hardy, rather trouble-free tree, although it may need a bit more water than a xeriscape landscape would provide. Other sugar maples that grow well here include the cultivar 'Caddo' and the subspecies *grandidentatum*, the Bigtooth Maple. The 'Highland Park' cultivar of bigtooth maple can be a good street tree choice.

Consider:

Bur Oak (*Quercus macrocarpa*): Native to OK and far SE Colorado where it forms natural hybrids with gambel oak. Other oaks: *Q. turbinella*, *Q. undulata*. "nearer native" than Chinkapin.

Northern Catalpa (*Catalpa speciosa*) Native range stretches into Western Kansas. Leafs out quite late in the spring, and as a corollary almost always holds them green in fall past the first frost, ie, not a tree for fall color! Will need some supplemental water for best performance, but quite drought tolerant. Grows quickly, and not famously weak-wooded like cottonwoods and willows.

As always, if you know more about any of these trees that you'd like to share, or want to add a tree to this list, please contact us at wildonesfrontrangetoolkit@gmail.com. Pictures are also welcome! Thanks!

* National Wildlife Federation Native Plant Finder, [www.nwf.org/Native Plant finder](http://www.nwf.org/Native-Plant-finder). Put your zip code in, and the site will tell you the number of butterfly and moth species that use particular native plants as host plants for their caterpillars. It's an amazing resource!

** The Plant Select program identifies and promotes plants that are highly suited to gardens in the high plains and mountains of Colorado. Plants recommended as plant select are not necessarily native to our region, but are generally adapted to our conditions, and are likely to do well in gardens here.