



## Trees

Crater Lake National Park was established in 1902, before commercial logging reached the High Cascades. Because of this, Crater Lake National Park's forests are almost entirely old growth forest ecosystems. However, the short growing season and

low-nutrient volcanic soils do not sustain extremely large trees. Few trees get over 150 feet (46 meters) in height, and most have diameters under 4 feet (1.2 meters).

## Forest Zones

Park forests are composed mostly of conifers, although a few hardwood species can be found. There are four major forest zones at Crater Lake National Park, each named after its dominant tree species.

Starting in the park's lower elevations (about 4,500 feet or 1,370 meters), ponderosa pine forest is the first zone seen by visitors who enter on Highway 62 from the south or west entrances.

The ponderosa zone gives way to lodgepole pine forest at about 5,000 feet (1,520 meters). Sometimes

referred to as "dog's hair forest" because of the dense, scraggly stands of thin lodgepoles, this zone covers vast areas.

Mountain hemlocks become dominant at about 6,000 feet (1,830 meters). This zone has the final tall trees in the park and has limited underbrush.

The next zone is almost purely whitebark pines and extends from about 7,500 feet (2,290 meters) to the top of Mt. Scott, the highest point in the park (8,929 feet or 2,721 meters). The whitebark pine zone is more an open woodland than a forest.

## Pines

Pines (genus *Pinus*) comprise the largest genus in the family Pinaceae. An easy way to identify a pine is by the needles, which grow in characteristic "bundles." The number of needles per bundle often helps determine a pine's species.

**Whitebark pine (*P. albicaulus*)** is found at higher elevations in the park, particularly on rocky crests. Tolerating the most severe of conditions, whitebark pines are often gnarled and twisted, sometimes appearing more as thick shrubs than trees. An almost pure stand of these trees is found around Cloudcap pullout on East Rim Drive.

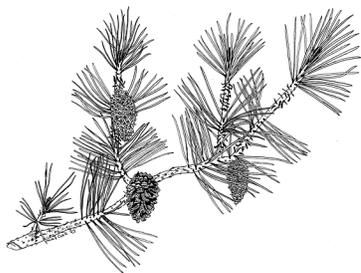
**Lodgepole pine (*P. contorta*)** grows in dense stands of very thin trees in the park's middle elevations. However, lodgepoles mingle in other forest zones throughout the park. Lodgepole pine is the park's only pine with bundles of two needles.

**Western white pine (*P. monticola*)** is fairly common at middle elevations, found scattered through-

out the lodgepole pine zone. Although the western white is more common, its bundles of five needles make it easy to confuse with the sugar pine; smaller cones on the western white is the most noticeable difference between the two.

**Sugar pine (*P. lambertiana*)** is interspersed among ponderosa pine, lodgepole pine and Douglas-fir stands in lower park elevations. It is a relatively uncommon tree and has very large cones that average over a foot long, which can make this an easy tree to identify. Sugar pines are the tallest of all pines, and sometimes exceed 200 feet (60 meters).

**Ponderosa pine (*P. ponderosa*)** is a drought-tolerant tree with striking orange bark when mature. Even before maturity, its long needles growing in bundles of three distinguish it from other local species. Southern Cascade ponderosas also have a strong vanilla-like aroma in their bark that is usually associated with their close relative, the Jeffrey pine (*P. jeffreyi*, not found in the park).



Lodgepole pine

## Hemlocks

Hemlocks (genus *Tsuga*), also in the family Pinaceae, are typically characterized by their tops, or leaders. The leader of a hemlock droops down, often aiming back down at the ground. There are two hemlock species in Crater Lake National Park.

**Mountain hemlock (*T. mertensiana*)** is easily observable around the park headquarters area and ranges up to some of the park's higher altitudes. With thin branches and small needles, this tree is

well-adapted to the heavy snows it is subjected to.

**Western hemlock (*T. heterophylla*)** is more common in the state of Oregon than the mountain hemlock. However, at Crater Lake it is only found in the far southwestern corner of the park, which has an altitude just on the upper edge of its range. Western hemlocks have much smaller cones than the mountain hemlocks.



Mountain hemlock

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## Firs

Firs (genus *Abies*) are represented by five separate species at Crater Lake, although one species, the Pacific silver fir (*A. amabilis*), has only one known specimen inside park boundaries. Members of the pine family (Pinaceae), firs have stemless needles that leave small circular indentations when pulled from the branch. Whole fir cones are rarely found around the tree because they fall apart after maturing.



*Shasta red fir profile*

**Shasta red fir (*A. magnifica shastensis*)**, a variation of the Sierran species (*A. magnifica*), is an abundant tree throughout the mountain hemlock zone. A deep reddish-brown bark gives this tree its common name. Its short needles (most less than one inch or 2.5 cm long) curve to point straight up from the branch, giving the foliage a bristly appearance. It can easily be found around Park Headquarters and Rim Village.

**Noble fir (*A. procera*)** is only found in the north-

ernmost part of the park. However, its similarities and occasional hybridizing with the Shasta red make the two extremely difficult to distinguish from each other.

**Subalpine fir (*A. lasiocarpa*)** is a moisture-loving tree found in canyons, along streambeds, and at the margins of boggy areas. It is a common tree in the lodgepole and hemlock forest zones in the park, particularly on the moister western slopes. Subalpine firs have very narrow, spire-like profiles and branches that grow down around their base, seldom leaving any trunk exposed.

**White fir (*A. concolor*)** is found at lower park elevations mixed in the ponderosa zone, particularly in the southern part of the park bordering the Klamath Basin. Its name comes from the whitish underside of its needles. Arrangement, color and length of needles (up to 3 inches or 7.5 cm) distinguish the white fir from others of its genus.

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## Other Conifers

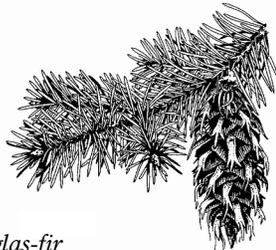
Other conifers of Crater Lake National Park each have only one species representing their genus at the park.

**Engelmann spruce (*Picea engelmannii*)** is found along streams in all canyons of the park. An accessible example is the small stand just northeast of Whitehorse Creek along the west entrance road. A typical spruce has stiff, sharp needles that grow straight out from all sides of the tree's needle-bearing branches.

**Douglas-fir (*Pseudotsuga menziesii*)**, Oregon's state tree, is a common tree on the lower western slope near the park's boundary. Not a true fir at all,

the Douglas-fir was classified under many different Latin names before it was given its current genus, which means "false-hemlock." Further west and down slope from the park's western boundary, Douglas-fir becomes the dominant tree in the western part of Oregon.

**Incense cedar (*Calocedrus decurrens*)** associates with ponderosa pines near the south entrance and occurs irregularly in western and southern parts of the park. This tree has scale-like leaves that hug tightly to the twig, and has reddish bark, similar in color and texture to that of a redwood. The incense cedar is in the cypress family, Cupressaceae.



*Douglas-fir*

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## Hardwoods

Hardwoods (non-conifers) also have several different species within the park. The six best-documented species are listed here.

**Sitka alder (*Alnus sinuata*)**, a member of the birch family (Betulaceae), is abundant in wet places at middle elevations, and is found both inside and outside the caldera.

**Thinleaf alder (*Alnus incana*)**, also known as "mountain alder," is the dominant species along streams in lower elevations.

**Pacific willow (*Salix lasiandra abramsii*)**, in the family Salicaceae, is found in wet zones at lower elevations. Many different types of willows exist along park streambeds as shrubs. Lower Annie Creek has examples large enough to be considered trees.

**Quaking aspen (*Populus tremuloides*)**, known for its gray-green leaves that shimmer with the slightest breeze, is found in the south entrance area, in Annie Creek, and in Sun Creek. *Populus* trees are also members of the willow family.

**Black cottonwood (*Populus trichocarpa*)** is found near the south entrance. A moisture-loving tree like its close relative, the quaking aspen, cottonwoods can also be found along Crater Lake's western shore.

**Oregon white oak (*Quercus garryana*)**, in the beech family (Fagaceae), is found in dry openings among the firs in Red Blanket Creek Canyon.