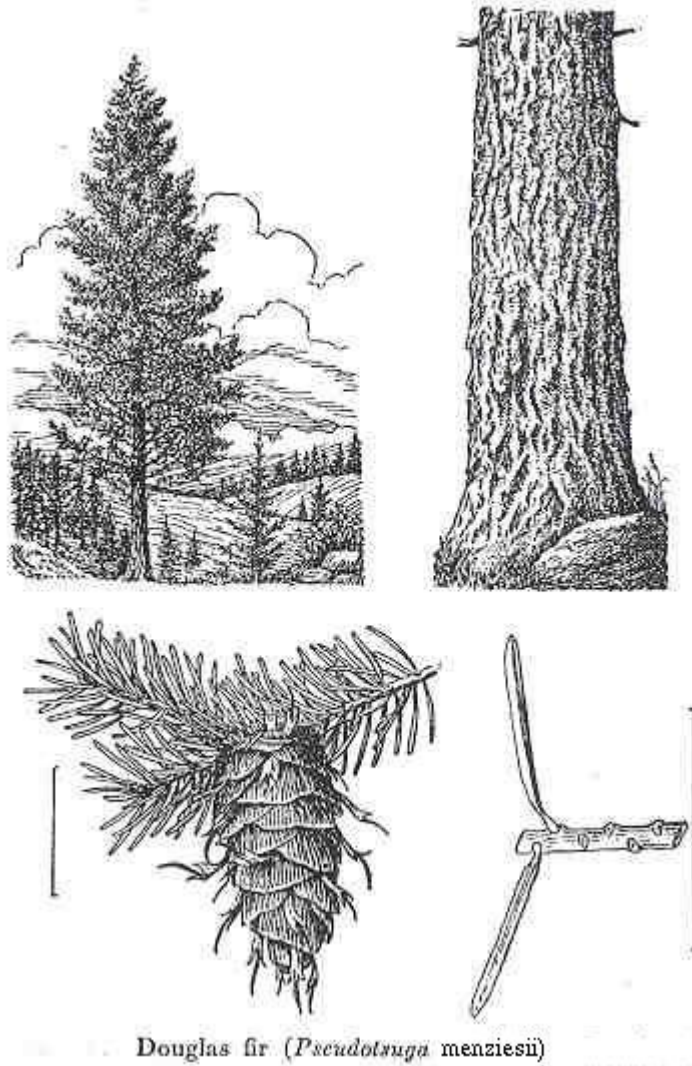


Douglas-Fir



Douglas fir is one of the primary forest trees in Colorado. Its cones are distinctive, and since it is common in forests at elevations widely used for camping, hiking, fishing and hunting, it is one tree you are sure to encounter and come to recognize.

Douglas fir typically grows in Colorado between 6000 and 10000 feet (1800 to 3000 m) above sea level, especially in comparatively cool and moist locations. In the lower part of its range Douglas fir groves are often found on north-facing slopes which are moister than other nearby locations. Douglas fir is also common in north, central and western Wyoming and in the mountains of northern New Mexico.

The sight of Douglas fir on the shaded side of a valley and Ponderosa pine on the sunny slopes is common in canyons leading up into the mountains. Douglas fir is sometimes mixed with Ponderosa

Douglas-Fir

pine or aspen. Douglas fir are tall evergreens with a shape slightly broader than the spruces. Douglas fir is much more tolerant of shade than Ponderosa pine. Douglas fir is quite drought resistant.

Douglas Fir grows rapidly and can be a pioneer in burned areas. Large old trees are quite fire resistant because of the thick bark. Extensive forests of large Douglas fir once grew in the southern Rockies, though they have widely been cut for timber. Smaller trees are still very common.

On the Pacific Coast Douglas fir grows to the second tallest tree in America. They also attain great age. The oldest tree is about 1300 years old and this particular tree was discovered by David Douglas – a Scots explorer and botanist for whom the tree is named - in 1825. It is presently about 221 feet (67.4) high and 45 feet (13.8 m) around the trunk - over 12 feet (4 m) in diameter. The Rocky Mountain variety is smaller. The largest example grows in Idaho and reaches 130 feet (39.6 m) high and 19 feet (5.8 m) trunk circumference. In Colorado this tree reaches a maximum size around 100 feet (30 m) high and two to three feet (0.8 m) in diameter. Colorado trees often live to 300 or 400 years.

Archibald Menzies of Scotland, physician and naturalist, first discovered and described the tree now called Douglas fir in 1791 at Nootka Sound on Vancouver Island, British Columbia, while Menzies was part of the Vancouver exploration of the Pacific coast. David Douglas, also from Scotland, rediscovered the tree in 1825 and introduced it into England.

Douglas fir is not actually a true fir tree, and its correct name is Douglas-fir, to make a distinction. It has needles similar to a fir (flat and soft), but the cones are more like spruce cones and not at all like fir cones. There was a long controversy about how to classify this tree. At one time the common name was Douglas spruce. "Spruce Tree House" in Mesa Verde National Park was named for Douglas spruce trees nearby. Botanists finally decided this tree was most like hemlocks, especially a hemlock of Japan called *Tsuga*, and a new genus *Pseudotsuga* was created for the Douglas fir and its relatives. In the end there is a sharing of the credit for recognizing this tree. In the scientific name ("*Pseudotsuga menziesii* (Mirbel) Franco") the species name remembers Menzies and Douglas is recognized by the common name.

The Douglas fir of Colorado is a variety of the species, *glauca*. The variety name *glauca* refers to a whitish cast over the blue-green color which is slightly different from the green needles of the Douglas fir of the west coast.

Douglas fir wood is of very high quality; it is used for everything from house construction and traditional shipbuilding to paneling, floors, and fine furniture. It has an attractive color and grain, plus strength. The keel and masts of the frigate USS *Constitution* are now Douglas fir: a tree of western mountains and coasts for an early American ship built on the east coast long before the United States included any Douglas fir trees.

Douglas fir trees are an essential part of Colorado forests. The seeds are eaten by grouse, squirrel, and chipmunk. The tree is occasionally browsed by mule deer and elk.

The western spruce budworm can defoliate entire Douglas fir trees. The moth form of the insect lays its eggs on the underside of needles in fall. They hatch in about ten days and overwinter under bark scales. In April and May the larvae begin feeding on new needles just released from buds. After about 40 days the larvae are mature. They pupate and new moths appear in about ten days, and the cycle starts all over again. Spruce budworm is a major pest, which afflicted the Rocky Mountains in the early 1980's, leaving large tracts of standing dead trees, notable by their dead, reddish-brown, needles. The needles are gone now and bare standing trunks remain.

Identifying features of Douglas fir

Cones

The Douglas fir cones are easy to recognize and absolutely distinctive. No other tree has cones like these. True fir cones are nothing like Douglas fir cones.

Mature cones are 1 1/2 to 4 inches (3.8 to 10 cm) long; hang downwards from the twigs, and fall intact from the trees when mature. They somewhat resemble spruce cones, except that long narrow papery strips with three points, called "three-pronged bracts," protrude from between the cone scales.

This feature is a positive identifier for Douglas fir. The outer margin of the cone scales are a smooth round curve, unlike the slightly rough or notched edges of Englemann spruce cone scales. Cones grow throughout the height of the tree, and may be abundant on a tree only 15 feet (4.5 m) high, but not all trees have cones.

Needles

Single and flat, 3/4 to 1 1/4 inches (1.9 to 3.2 cm) long, dark green or blue-green to green with a very slight yellow tint. The needles narrow at the base into a short stalk, flaring back slightly into the twig. This stalk falls with the needle from the twig. This feature can be used to distinguish Douglas fir needles from true firs. Needles have a groove on the upper surface.

On some trees the year's new young growth may have the pale waxy coating on the needles which gives evergreens the whitish blue-green color commonly associated with the Blue spruce. This coating wears off quickly. Some trees never develop it. Two Douglas firs next to each other may have noticeably different color. Some Douglas fir even may be lighter in color than Ponderosa pine growing nearby.

Needles have a pleasant Christmas-tree-like scent when crushed. This tree is often grown commercially on private farms for Christmas trees.

Bark

Bark of young trees is smooth, gray or reddish brown, and thin, sometimes with resin blisters, resembling bark of true firs. When trunk diameter reaches about 5 inches the bark begins to crack vertically or into jigsaw pieces, at first with very thin cracks, or even pop off circular scales. When the gray outer bark splits the under bark shows reddish-brown. Some trunks may reach 12 inches (30 cm) diameter or more before the bark begins to split. On large mature trees the bark may be faded gray to gray-black, or pale brown to dark brown, furrowed into long, thick (up to 6 inches; 15 cm) solid or scaly ridges with an interwoven appearance. The distinctive pale brown color of mature Douglas fir trunks, free of any hint of red or orange, combined with the twisted furrows, is reminiscent of manila rope, and is not seen on other trees.

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