

PONDEROSA PINE

Pinus ponderosa P. & C.

Lawson

Plant Symbol = PIPO

Contributed by: USDA NRCS Plant Materials Program



Gerald and Buff Corsi
© California Academy of Sciences
@ CalFlora

Alternate Names

western yellow pine, yellow pine, bull pine, blackjack

Uses

Beautification: This is a handsome tree for purposes of beautification but due to its height should not be grown within road rights-of-way.

Erosion Control: This tree with its native understory is an excellent erosion control cover. It is one of the best evergreens for windbreaks.

Livestock: The young tree itself is not eaten by livestock unless most of the other browse species have been destroyed by overgrazing. When eaten by cows during gestation this species may cause abortion.

Recreation: Some of the finest campgrounds and picnic areas in the west are found in native stands of

ponderosa pine. Trees are stable and generally wind-firm with little danger of top breakage.

Wildlife: While deer, elk and mountain sheep do not eat the needles unless other browse species are totally absent, they do feed on the understory species. The seeds of ponderosa pine are choice food of red-winged blackbirds, chickadees, mourning doves, finches, evening grosbeaks, jays, Clark's nutcrackers, nuthatches, white-throated sparrows, rufous-sided towhees, turkeys, chipmunks and squirrels. The pine needles are important food of blue and spruce grouse. The pine bark is fair food for beavers, and is used by porcupines which sometimes damage the trees. Nuthatches dig nest holes in dead trees.

Wood Products: It is used in small extent for Christmas trees but not well suited to cultural work for this purpose. It makes excellent lumber for cabinet and construction work. It is used for veneer, core stock and sheathing. It is used for paper pulp but demand is low. It is used for poles and has fair durability for posts. It is used for fuel especially for fireplaces.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

Pinus ponderosa P. & C. Lawson, is a large, long-lived, native forest tree common throughout the western U.S. Height of mature trees range from 55 to 90 feet. Diameter breast high ranges from 15 to 35 inches. Age at maturity ranges from 70 to 250 years. The needles are 3 to 5 inches long with 3, or rarely 2 to 4, needles in a cluster (bundle). The needles usually remain on the stem 3 to 4 years with the major needle drop in September and October. The cones are pineapple-shaped, 3 to 6 inches long, and take 2 years to mature. The bark is dark brown to nearly black when young and turns from cinnamon brown to orange-yellow at about 90 years of age. This tree has a deep tap root except on shallow soils where roots often follow cracks for considerable distance. This tree is well adapted to grow on bare rock with its roots following crevices or cracks in the rock.

Adaptation and Distribution

Average annual-precipitation in the plant's range is from 12 to 40 inches or more. It will grow well in hot, dry sites and can withstand very cold winters. It is very drought tolerant but can be drowned out by high water and still show surprising water tolerance in some situations. The plant is found on a wide variety of soils from shallow to deep, and from gravelly or cobbly sands to sandy clay loam and loams in texture, but mostly on sandy loams. It is adapted to grow on bare rock with its roots in the cracks. It has low alkalinity tolerance growing on soils with pH 6.0 to 7.0. Has low water table tolerance and medium drought tolerance. Slopes vary from 2 to 50%. Elevation varies from 6000 to 8500 feet. Topography is gentle to steep mountain slopes, ridgetops and mesas.

Ponderosa pine is distributed throughout the west and midwestern United States. For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment

Site preparation is needed to control competition. Use transplant stock 1-1, 2-1 or 2-2. Plant stock 5 to 9 feet apart depending on site. Seed matures August to November on trees over 20 years old. A good seed crop may be produced every 2 or 3 years but good conditions for seedling establishment may occur only every 20 to 25 years on the poorer sites.

Management

Young stands should be protected from over-grazing by livestock when green feed is limited. Use of tree foliage by livestock usually indicates excessive overuse of the associated plants. By proper grazing use of the understory species no damage to young or old trees will occur from livestock grazing. Proper spacing of trees will provide more feed for livestock as well as greater timber production. More widely spaced trees will develop larger crowns, resulting in heavier seed crops for wildlife and more forage for deer, elk and mountain sheep.

Weeds should be controlled by grazing, culture control or by applications of approved herbicides.

Pests and Potential Problems

Ips bark beetles may be present near green slash in young stands. Avoid cutting April to August. Several other species of bark beetles may be found in older trees. Mistletoe may be present especially in lower sites. Cut these infested trees during intermediate cuts. Western gall rust is a dark brown

oval branch enlargement about 1 to 2 inches in diameter.

Cultivars, Improved, and Selected Materials (and area of origin)

Seedlings are available from most commercial nurseries mainly in the western United States. No specific cultivars are recommended. There are 2 varieties: *Pinus ponderosa* var. *arizonica* in the southwest and the Rocky Mountain variety, *Pinus ponderosa* var. *scopulorum*, occurring east of the Continental Divide, in the Central Plateau of western Colorado, Utah, eastern Nevada, Arizona and New Mexico.

Prepared By & Species Coordinator: USDA NRCS Plant Materials Program

Edited: 05Feb2002 JLK; 060802 jsp

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

Read about [Civil Rights at the Natural Resources Conservation Service](#).