

Plant Data Sheet

Whitebark Pine, *Pinus albicaulis*



Range

Whitebark pine ranges from northern British Columbia to southern California. ⁽¹⁾

Climate, Elevation

Whitebark pine grows in a cold, windy, snowy, and generally moist climatic zone. In moist mountain ranges, whitebark pine is most abundant on warm, dry exposures. Conversely, in semiarid ranges, it becomes prevalent on cool exposures and moist sites. ⁽²⁾ Elevation ranges from 2350 to 2750 m. ⁽¹⁾

Local occurrence (where, how common)

Whitebark pine can grow on rocky ridges and bluffs but grows largest at lower elevations in protected ravines and canyons. ⁽¹⁾

Habitat preferences

Most whitebark pine stands grow on weakly developed (immature) soils. ⁽¹⁾ ⁽²⁾

Plant strategy type/successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)

Shade intolerant. ⁽²⁾

Associated species

Engelmann spruce, lodgepole pine, subalpine fir, mountain hemlock, western white pine, and limber pine. ⁽²⁾

May be collected as: (seed, layered, divisions, etc.)

Seed, stem cuttings, layering. ⁽¹⁾ Grafting is easy on rootstock of either whitebark pine or western white pine. ⁽²⁾

Collection restrictions or guidelines

The whitebark pine cones ripen in August and September; collect them when they turn from dark purple to a dull purple to brown by hand picking. They should be collected as soon as they are ripe. ⁽¹⁾

Seed germination (needs dormancy breaking?)

Stratify by soaking the seeds in water for one or two days, then placing them in a moist medium and keeping them at a temperature of 1-5°C for 90-120 days. Making a small cut in the seed coat to facilitate water uptake can enhance germination. ⁽¹⁾

Seed life (can be stored, short shelf-life, long shelf-life)

Can be stored for long-term in proper condition. ⁽¹⁾

Recommended seed storage conditions

Dry the seeds to a moisture content of 5-10% and keep at -17 to -15°C for long-term storage and 1-5°C for short-term storage. ⁽¹⁾

Propagation recommendations (plant seeds, vegetative parts, cuttings, etc.)

Collect cones, separate seeds, plant seeds. Grafting on whitebark pine or western white pine stock could be easy. ⁽¹⁾ Cuttings should not be taken from trees older than five years. ⁽²⁾

Soil or medium requirements (inoculum necessary?)

Sow the seeds at depth of 1.3 cm directly in nursery beds with well-aerated, fertile soil that allows for adequate drainage. ⁽¹⁾

Installation form (form, potential for successful outcomes, cost)

Seeds, container-plants grown from seeds, stem cuttings, grafting plants. ^{(1), (2)}

Recommended planting density

4,850-6,615 seeds per kilogram. ⁽¹⁾

Care requirements after installed (water weekly, water once, never water, etc.)

Outplant seedling as 2 or 3 years' old. ⁽¹⁾

Normal rate of growth or spread; lifespan

Whitebark pine is a long-lived, slow-growing tree. The trees often reach four to seven hundred years of age while grow 60-90 cm in diameter and reach only 2-15 m in height. ⁽¹⁾

Sources cited

(1). Rose, R., C. Chachulski and D. Haase. 1996. Propagation of Pacific Northwest Native Plants: A Manual, Volume Two, First Edition. Nursery Technology Cooperative, Oregon State University, Corvallis, Oregon, 205-206 p.

(2). Burns, R. and B. Honkala 1990. Silvics of North America, Volume 1, Conifers. Agricultural Handbook 654. U.S. Department of Agriculture, Forest Service, Washington, D. C. http://www.na.fs.fed.us/spfo/pubs/silvics_manual/Volume_1/pinus/albicaulis.htm

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