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Golden Arrow Bonsai

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Ponderosa Pine

*Pinus ponderosa var. scopularum*



General

Ponderosa pine is the most widely distributed pine in North America and is probably the signature tree of the American West. Specimens may attain trunk diameters in excess of 9 ft and heights well over 200 ft. There are three American subspecies. This pine prefers dry, mountainous sites at elevations of 3,000-9,000 ft.

The tree is a favorite for bonsai because of the wildly contorted trunks, rough bark and fantastic driftwood that can be found on old specimens. It takes to container cultivation easily.

Light

This tree requires bright sunlight through at least a large portion of the day. Dappled sunlight is OK, but over long periods of time (several years) too much shade will lead to a slow decline in the vigor of the tree. However, after periods of stress (repotting, wiring, needle pruning, after shipping, etc), the tree will benefit from partial shade and misting for a week or two.

Water

Ponderosa pine typically grows in a dry environment and the root system requires that oxygen be available. In a bonsai container they are usually grown in a coarse, free draining soil mixture that will not become waterlogged for long periods. In hot weather the tree should be watered when the soil appears dry, but not if it still appears wet. In the heat of summer I usually give everything a brief spray in the morning, time permitting, and then do a real watering in the evening. They require less water than most other trees and missing a watering or two is not usually a cause for concern. A small pot will require more frequent watering than a large one.

Winter

Ponderosa pine are extremely winter hardy and can easily tolerate temperatures well below zero when precautions are taken. They can be wintered outside on the ground in a shaded area out of the wind with the pot covered in mulch to the rim. They can be kept in an unheated garage or

greenhouse. They should probably freeze hard at least once or twice per winter and can stay frozen for the whole winter without harm. They need a minimum six week cold dormant period when the nighttime temps drop into the 30's and 40's and occasionally colder. In their native environment they may have occasional nighttime freezes during almost any month of the year.

### Fertilizer

A mild fertilizer of almost any kind will work well. A slow-release fertilizer like Osmocote, or Bio-gold works well. Late summer and fall fertilization will result in more vigorous budding and back-budding, while spring fertilization may result in excessive needle growth.

### Training

Ponderosa pine are very easily shaped by wiring and the branches and trunks are frequently flexible enough that with proper technique dramatic changes in the style of the tree can successfully be made. Branch junctions are usually the weakest point and should be handled with care. Wire usually needs to stay on 2-3 years and can then be cut off. Some branches may need to be rewired again if they relax too much, but in general the tree holds its shape well.

To stimulate back-budding the strong and terminal buds should be plucked off in the fall to late winter. Needles should be thinned out so sunlight can hit the branch. The tree should be in good health and fertilized. This work should start after the tree has been potted two or three years and has noticeably regained vigor. The tree will generally break back new buds on areas where rough bark has not yet formed.

Heavy spring fertilization, overwatering and lack of sufficient sun will result in needles that are too long. The development of denser branch ramification through bud plucking and proper care will reduce needle length over time. Excessively long needles can also be trimmed with sharp scissors anytime from mid-winter to mid-summer. The foliage should be sprayed with cold water immediately afterwards and the tree put in the shade for a day or two. Needle trimming should not be done in late summer/fall as the tree is shutting down, as this may lead to browning or dieback of the needle tips.

Ponderosa pine keep their needles three or four years and shed the old needles every fall. Yellowing needles at the base of the foliage mass in the fall is normal and should be expected.

### Repotting

Generally a newly collected tree takes about three years to re-establish its root system in its new container. At this time there is usually a noticeable increase in vigor, which on pines means you should start seeing the buds make candles in the spring, rather than just opening a set of needles, as they often do the first year or two after transplanting. The appearance of spring candles is a good sign that the tree is ready for repotting. The best time for this is the following spring, after all danger of freezing is past. At this time dead roots can be removed, excessively long roots can be trimmed and more of the remaining

original soil can be washed off. The planting angle can be adjusted to fit the new container.

There may be good reasons to repot before three years; a tree may already be strong and vigorous, a pot may have cracked or other reasons. In this case it is usually better to just move the tree into its new pot while trying to disturb the root system as little as possible. A newly repotted tree should always be protected from freezing.