

PONDEROSA PINE SERIES

Pinus ponderosa

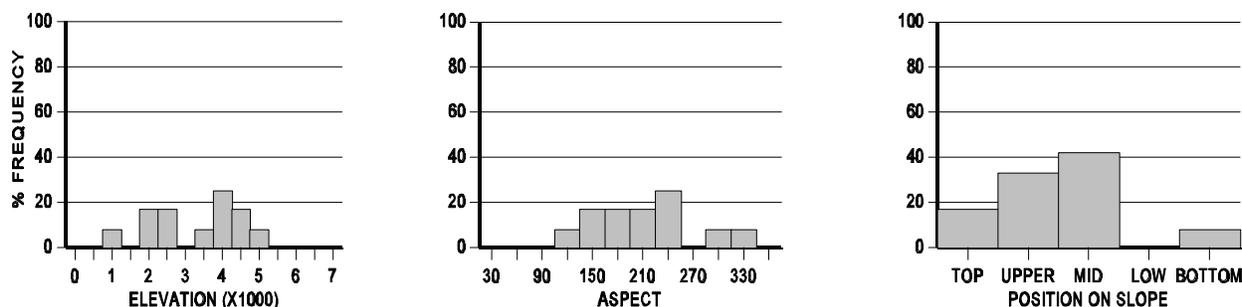
PIPO

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Ponderosa pine is a widely occurring species in the western United States. It is common in areas with low summer rainfall and is generally tolerant of moisture stress. While ponderosa pine behaves as a fast growing, seral species on hot, dry sites with shallow, droughty soils, it is the climax species on only a few sites in the Klamath and Cascade Province in southwestern Oregon (Atzet 1992). Ponderosa pine can be found in frost pockets and on vertisols, soils with high shrink-swell characteristics. Ponderosa pine regeneration is stimulated by fire, and controlling fires restricts regeneration.

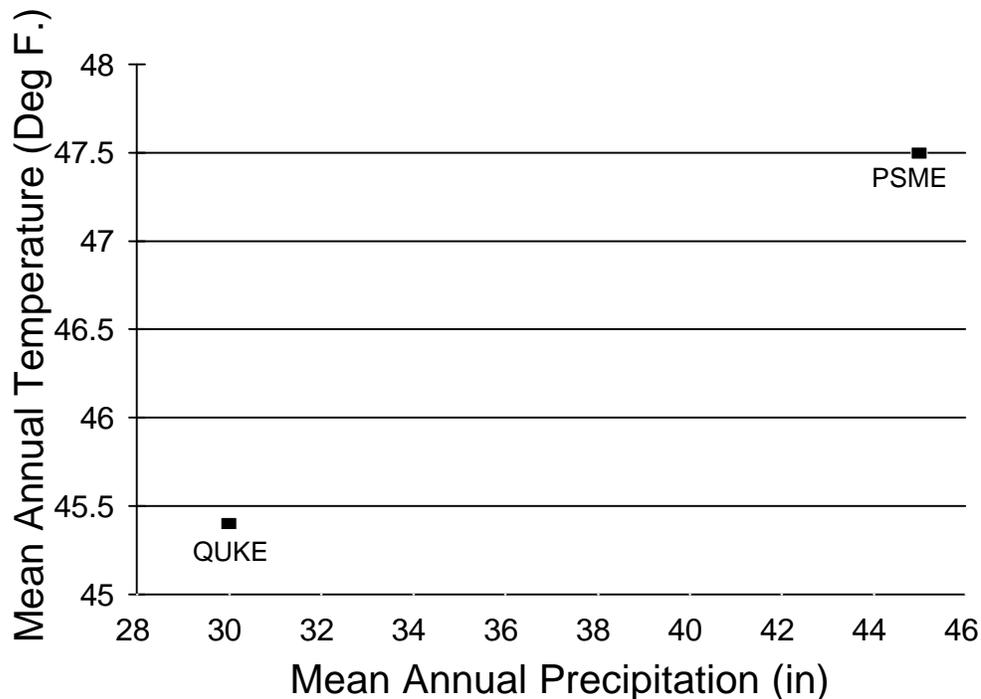
The Ponderosa Pine Series is found near the valley bottom at slightly higher elevations than the Oregon White Oak Series. Small pockets of this Series may occasionally be found at high elevations on south aspects with shallow, rocky soils.

As shown in the graphs below, the Series ranges in elevation from 1050 feet to 5220 feet, with an average elevation of 3310 feet. The Series occurs on all aspects and slope positions, but occurs most frequently at mid-slope positions.



Parent material is variable, consisting of meta-volcanics, basalt, andesite, mixed ultramafics, schist, and diorite. Gravel cover averages 2 percent. Rock cover ranges from 0 to 70 percent, with an average of 7 percent. Bedrock cover ranges from 0 to 45 percent, with an average of 5 percent. Bare ground ranges from 0 to 90 percent, with an average of 9 percent. Soil textures are silty clay loam, loam, or silty clay. Litter ranges from 10 to 99 percent, with an average of 66 percent. Moss is generally absent.

The mean annual temperature for the Ponderosa Pine Series ranges from 45 degrees F to 48 degrees F and the mean annual precipitation ranges from 30 inches to 45 inches. The relative positions of the plant associations in the environment are shown on page PIPO 2. Each association is plotted by mean annual temperature and mean annual precipitation.



Total species richness, based on vascular plants only, is calculated for each association. The average total species richness for the Ponderosa Pine Series is 21 species. Total species richness for Ponderosa Pine-Douglas-fir is 23 species and total species richness for Ponderosa Pine-California Black Oak is 19 species.

On Bureau of Land Management sites, tree cover exceeding 10 feet tall (3 meters) averages 60 percent, while cover for trees less than 10 feet tall averages 3 percent. Cover for shrubs greater than 20 inches tall (50 centimeters) averages 11 percent and cover for shrubs less than 20 inches tall averages 1 percent. Herb/grass cover averages 28 percent.

On Forest Service sites, upper layer tree cover averages 23 percent, as does mid-layer tree cover. Lower layer tree cover averages 12 percent. High shrub cover averages 24 percent, while low shrub cover averages 14 percent. Herb/grass cover averages 38 percent.

Two plant associations have been identified for the Ponderosa Pine Series in southwestern Oregon. They were described from 12 plots, 10 on Bureau of Land Management lands and 2 on Forest Service lands. The plant associations were described using Bureau of Land Management data. Climax ponderosa pine rarely occurs on National Forest Service lands in southwestern Oregon.

The two associations in this Series are distinguished by either the presence or absence of Douglas-fir. The Ponderosa Pine-Douglas-fir Association has Douglas-fir frequently present with covers usually greater than 5 percent in the overstory and understory combined. Douglas-fir is present in the Ponderosa Pine-California Black Oak Association, but covers are less than or equal to 1 percent and California black oak is present, generally with covers greater than 15 percent.

The relationship of draft and final plant associations in the Ponderosa Pine Series is shown below. The draft association is listed, with the final association below it, with the percentage of plots that make up the association (refer to Methods).

PIPO-PSME (N=2)

PIPO-PSME (100%)

LITERATURE CITED

Atzet, Thomas, David L. Wheeler, Brad Smith, Jerry Franklin, Gregg Riegel, and Dale Thornburgh. 1992. Vegetation. P. 92-113 in Hobbs, Stephan D., et al., editors. Reforestation Practices in Southwestern Oregon and Northern California. Forest Research Laboratory, Oregon State University. 465 pages.

KEY TO THE PONDEROSA PINE PLANT ASSOCIATIONS

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| <p>1a. Douglas-fir (PSME) present with covers greater than 5 percent in the overstory and understory combined. California black oak (QUKE) usually absent.</p> | <p>PIPO-PSME Page PIPO 4</p> |
| <p>1b. Douglas-fir (PSME) absent. If present, Douglas-fir cover is less than 5 percent in both the overstory and understory combined. California black oak (QUKE) present, usually with covers greater than 15 percent.</p> | <p>PIPO-QUKE Page PIPO 6</p> |