

OREGON WHITE OAK SERIES

Quercus garryana

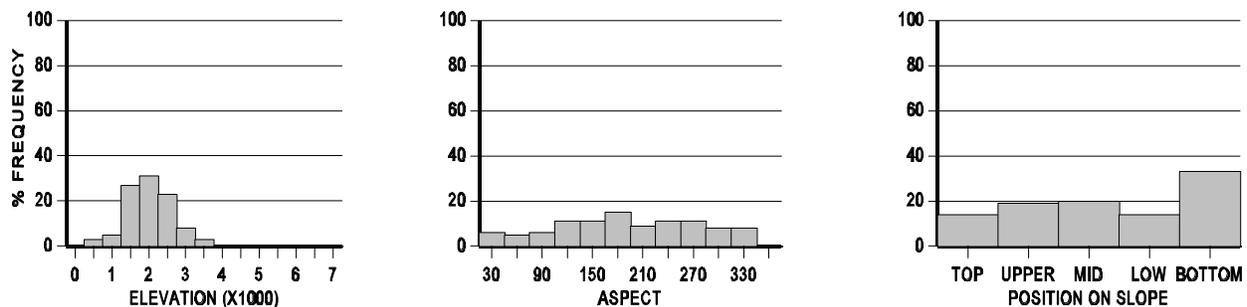
QUGA4

Patricia A. Martinez

Oregon white oak occurs from central California north into Canada and is the most abundant and widely distributed oak in Oregon. Oregon white oak tends to be restricted to islands of shallow soils and hot, dry microclimates. It is usually located on dry to moist, well-drained, gravelly soils, and is shade intolerant. Oregon white oak produces an abundance of acorns and is a vigorous sprouter.

The Oregon White Oak Series is found along the valley floor at low elevations. The Series is discontinuous with isolated pockets on the Tiller Ranger District, Umpqua National Forest and along Bear Camp Road near Agness, Gold Beach Ranger District, Siskiyou National Forest.

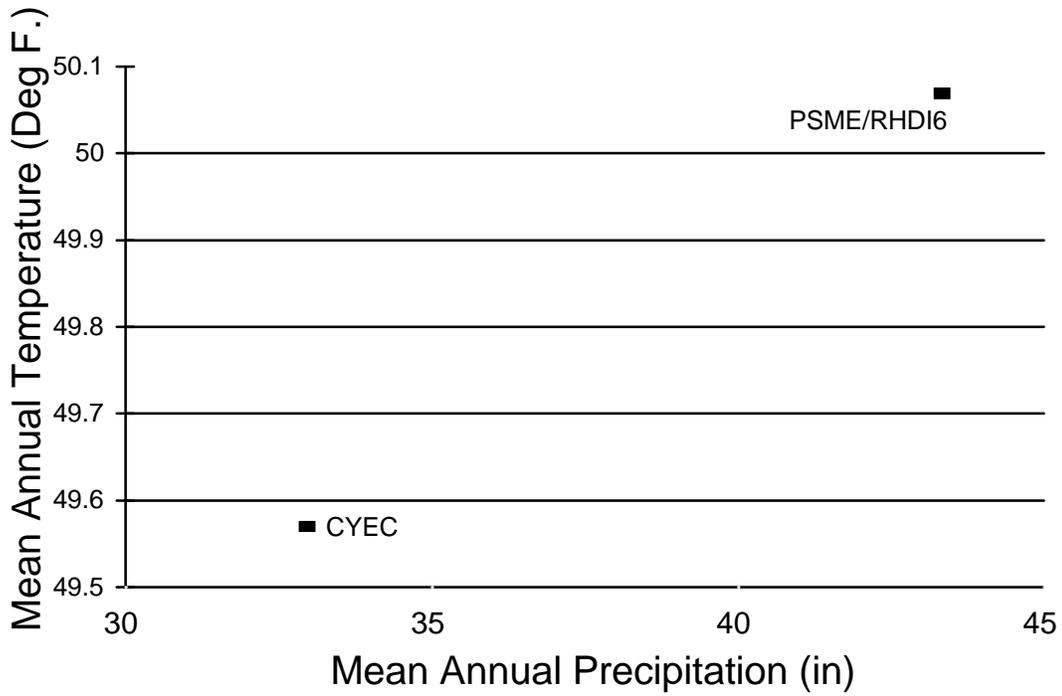
As shown in the graphs below, this Series ranges in elevation from 500 feet to 3300 feet, with an average elevation of 1980 feet. Although it occurs on all slope positions and aspects, it is more commonly found on southerly aspects and is slightly more common in valley bottoms.



Parent material is variable, consisting of meta-volcanics, serpentine, tuffs, sandstone, mixed sediments, mixed meta-sediments with ultramafics, mixed sediments with ultramafics, mixed ultramafics, welded tuffs, basalt and andesite. Percent cover of rock ranges from 0 to 50 percent, with an average of 6 percent. Percent cover of bedrock ranges from 0 to 30 percent, with an average of 1 percent. Bare ground ranges from 0 to 20 percent, with an average of 3 percent. Litter ranges from 0 to 99 percent, with an average of 41 percent. Moss ranges from 0 to 35 percent, with an average of 4 percent.

Based on eight plots sampled, soils are shallow to deep, and moderately well to well drained. The surface texture is silt loam or loam, with 0 to 25 percent gravel, 0 to 30 percent cobbles, and 20 to 25 percent clay. The subsurface texture is silty clay loam and clay loam, with 0 to 20 percent gravel, 0 to 40 percent cobbles, 0 to 20 percent stones, and 27 to 40 percent clay. The soil moisture regime is probably xeric and

the soil temperature regime is probably mesic. Soils classify into the following subgroups: Typic Haploxeroll, Lithic Haploxeroll, Lithic Argixeroll, Lithic Xerochrept, and Typic Xerochrept.



The mean annual temperature for the Oregon White Oak Series is 50 degrees F while the mean annual precipitation ranges from 33 inches to 43 inches. The relative positions of the plant associations in the environment are shown above. Each association is plotted by mean annual temperature and mean annual precipitation.

Average total species richness, based on vascular plants only, is calculated for each association. The average total species richness for the Oregon White Oak Series is 23 species. Average total species richness for the Oregon White Oak-Douglas-fir/Poison Oak Association is 23 species and average total species richness for the Oregon White Oak/Hedgehog Dogtail Association is 24 species.

On Bureau of Land Management sites, tree cover exceeding 10 feet tall (3 meters) averages 46 percent, while tree cover less than 10 feet tall averages 5 percent. Cover for shrubs greater than 20 inches tall (50 centimeters) averages 11 percent, and cover for shrubs less than 20 inches tall averages 19 percent. Herb/grass cover averages 37 percent.

On Forest Service sites, upper layer tree cover averages 6 percent. Mid-layer tree cover averages 13 percent, while lower layer tree cover averages 10 percent. High shrub cover averages 1 percent, while low shrub cover averages 4 percent. Herb/grass cover is high, averaging 91 percent.

Two plant associations have been identified for the Oregon White Oak Series: Oregon White Oak/Hedgehog Dogtail and Oregon White Oak-Douglas-fir/Poison Oak. They were described from 64 plots, 60 on Bureau of Land Management lands and 4 on Forest Service lands. Oregon White Oak/Hedgehog Dogtail is drier than Oregon White Oak-Douglas-fir/Poison Oak; Douglas-fir is rarely present and poison oak is usually present, with an average cover of 5 percent. Oregon White Oak - Douglas-fir/Poison Oak is more productive than Oregon White Oak/Hedgehog Dogtail; Douglas-fir is almost always present, and poison oak has an average cover of 18 percent. Oregon White Oak/Hedgehog Dogtail has high herb cover and may have up to 18 grass species present. Hedgehog dogtail is present 85 percent of the time with an average cover of 10 percent, and bur-chervil is present 79 percent of the time with an average cover of 6 percent.

The relationship of draft and final plant associations in the Oregon White Oak Series is shown below. The draft association is listed, with the final associations below, each in order of most to least common, with the percentage of plots that make up each association (refer to Methods section).

QUGA/FRVEB (N=5)
 QUGA4/CYEC (80%)
 PSME-CADE27/BEPI2 (20%)

KEY TO THE OREGON WHITE OAK PLANT ASSOCIATIONS

- 1a. Douglas-fir (PSME) present; Douglas-fir cover for both the overstory and understory combined is greater than or equal to 2 percent.

QUGA4-PSME/RHDI6
 Page QUGA4 4

- 1b. Douglas-fir (PSME) absent; if present, cover for both the overstory and understory combined is less than or equal to 1 percent.

QUGA4/CYEC
 Page QUGA4 6