

California Phenology Project:
species profile for
Blue Oak
(*Quercus douglasii*)



CPP site(s) where this species is monitored: Sequoia National Park and John Muir NHS



Photo credit: loarie (flickr)

What does this species look like?

This deciduous tree is short and straight. It grows from 6 to 20 m tall and has thin and flaky light grey bark. The waxy bluish-green leaves are 3 to 8 centimeters long with wavy margins. This species is monoecious, having male and female flowers separate, but on the same plant. Male flowers are yellow green hanging catkins, and female flowers are small and solitary, growing in the axis of leaves. This species is wind pollinated. The acorns are 2 to 3 centimeters long and take one year to mature.

When monitoring this species, use the USA-NPN **deciduous trees and shrubs (with pollen)** datasheet.

Species facts!

- The CPP four letter code for this species is **QUDO**.
- Exhibits masting behavior; all individuals in a population will have synchronized episodic acorn productions. This is thought to satiate seed predators so that some acorns can survive to germinate the following year.
- Susceptible to Sudden Oak Death disease, a plant pathogen that can have a devastating impact on forests.



Photo credit: loarie (flickr)



Photo credit: KQED Quest (flickr)

Where is this species found?

- Endemic to California.
- Found on dry slopes, interior foothills, and woodland habitats.
- Covers the foothills surrounding the Central Valley of California.
- At elevations less than 1200 meters.

For more information about phenology and the California Phenology Project (CPP), please visit the CPP website (www.usanpn.org/cpp) and the USA-NPN website (www.usanpn.org)

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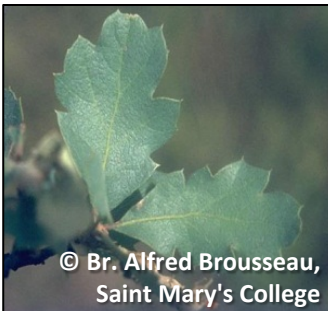
Breaking leaf buds

Dani Cessna



Leaves

Eugene Zalenko



Increasing leaf size

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Colored leaves

Eugene Zalenko



Flowers or flower buds

The male inflorescence is a catkin which is initially compact and stiff, but eventually unfolds, lengthens, and hangs loosely from the branch. Female flowers are very small and petal-less, emerging from the growing stem at the point where a new leaf is attached.

Marc Kummel



Open flowers

The male flowers will open once the catkin has unfolded and is hanging loosely. Female flowers are open when the pistils are visible, but will be very difficult to see where they are out of reach.

Todd Hamilton

When monitoring **flower or flower bud abundance** for this species, count each inflorescence as a single flowering structure!

When monitoring the **proportion of open flowers**, estimate the number of individual flowers that are open, not inflorescences! For big trees, estimate proportions of open flowers for a few branches and extrapolate for the rest of the tree.



Fruits

The fruit is an acorn that changes from green to yellowish-green to brown or dark brown.

Eugene Zalenko



Ripe fruits

The fruit is considered ripe when it is brown or dark brown.

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Important Note: USA-NPN flower and fruit phenophases are nested. If you say "Y" to "open flowers" you should also have said "Y" to "flowers or flower buds" and if you say "Y" to "ripe fruits" you should also have said "Y" to "fruits"

Phenophases not pictured: **Falling leaves, Pollen release, Recent fruit or seed drop**