California Phenology Project: species profile for California Live Oak (*Quercus agrifolia*)

CPP site(s) where this species is monitored: Redwood Regional Park, Roberts Regional Recreation Area

Photo credit: randomtruth (Flickr)

What does this species look like?

This large evergreen tree has a dark grey, stout, short trunk and wide spreading branches. The leathery leaves are shiny on the upper surface and dull on the lower surface, which is covered with fuzzy hairs. The leaf margins are spiny and holly-like. The individuals are monoecious; each tree bears both male and female flowers but the male flowers produce only anthers and the female flowers produce only pistils. The yellow-green male flowers are clustered in elongated, drooping catkins that are 4-10 cm long, and the female flowers are clustered in reddish green spikes.

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

Species facts!

- The CPP four letter code for this species is **QUAG.**
- This oak is very fire resistant. Adaptations to fire include evergreen leaves, thick bark, and the ability to sprout post-fire from the roots, trunk, and upper crown.
- Individuals can live up to 250 years.
- Susceptible to Sudden Oak Death disease.
- Wind pollinated.
- Each acorn takes a full year to develop from a pollinated flower.

Photo credit: randomtruth (Flickr)

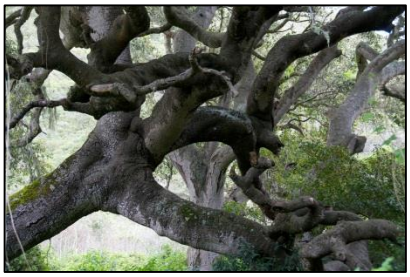

Photo credit: Jerry Kirkhart (Flickr)

Where is this species found?

- In valleys, slopes, mixed-evergreen forest, and woodlands at elevations less than 1500 meters.
- Endemic to California; found in North Coast Ranges, Central Western California, and SW California.
- Occurs on soils ranging from silts and clays to weathered granite.

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)

Version 1, May 2015

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Breaking leaf buds

*This phenophase can be difficult for this species; remember, you can circle **?** if you are unsure of what you are seeing!*

Young leaves

Young leaves are generally thinner and lighter colored than mature leaves.

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.

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

Open flowers

The male flowers will open once the compact 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.

*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 light brown.

Ripe fruits

The fruit is ripe when it is light brown and drops from the plant. ***Since fruits (acorns) drop from the plant when ripe, do not observe the Ripe Fruits phenophase for this species. (Leave this line on the datasheet blank.)***

***Important Note**: 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"*

*Instead of recording ripe fruits, observe **Recent fruit or seed drop** (as pictured above).*

*Phenophase not pictured: **Pollen release***

Version 1, May 2015