

Sedgwick Reserve

Phenology phenophase descriptions

Buckwheat

Young leaves

Leaves

Flowers or flower buds

Open flowers

Fruits

Ripe Fruits

Recent fruit drop

Coast Live Oak

Breaking leaf buds

Young leaves

Flowers or flower buds

Open flowers

Pollen release

Fruits

Ripe fruits

Recent fruit drop

Coyote brush

Young leaves

Flowers or flower buds

Open flowers

Pollen release

Fruits

Ripe Fruits

Recent fruit drop

Elderberry

Breaking leaf buds

Leaves

Increasing leaf size

Colored leaves

Falling leaves

Flowers or flower buds

Open flowers

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Toyon

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Buckwheat

Eriogonum fasciculatum

YOUNG LEAVES

One or more young, unfolded leaves are visible on the plant. A leaf is considered “young” and “unfolded” once its entire length has emerged from the breaking bud so that the leaf stalk (petiole) or leaf base is visible at its point of attachment to the stem, but before the leaf has reached full size or turned the darker green color or tougher texture of mature leaves on the plant. Do not include fully dried or dead leaves.



Young leaves



Some very poor pictures of new leaves. Note the color difference between the new leaves and the old leaves. Close observation of the new leaves you will see that they appear soft and “new.”

Buckwheat

Eriogonum fasciculatum

LEAVES

One or more live, unfolded leaves are visible on the plant. A leaf is considered “unfolded” once its entire length has emerged from the breaking bud so that the leaf stalk (petiole) or leaf base is visible at its point of attachment to the stem. Do not include fully dried or dead leaves.



Buckwheat

Eriogonum fasciculatum

FLOWERS OR FLOWER BUDS

One or more fresh open or unopened flowers or flower buds are visible on the plant. Include flower buds that are still developing, but do not include wilted or dried flowers.



Flowers begin as an elongation from the stem this is called a CYME— a flower cluster with a central stem bearing a single terminal flower that develops first, the other flowers in the cluster developing as terminal buds of lateral stems.

There is a tendency to want to count these as new leaves but they appear different.



Flowers and flower buds.



Lateral stems developing from the terminal bud can be seen in the above photos.

Buckwheat

Eriogonum fasciculatum

OPEN FLOWERS

One or more open, fresh flowers are visible on the plant. Flowers are considered “open” when the reproductive parts (male stamens or female pistils) are visible between or within unfolded or open flower parts (petals, floral tubes or sepals). Do not include wilted or dried flowers.



Fresh flowers will have pink anthers and look very new. After pollination the flowers will dry and begin to turn brown.



Spent flowers will appear dry and the anthers will have lost their pink color and petals will turn brown.

Buckwheat

Eriogonum fasciculatum

FRUITS

One or more fruits are visible on the plant. For *Eriogonum fasciculatum*, the fruit is tiny and capsule-like, partially enclosed in a spent flower base (calyx), with many such spent flower bases tightly clustered together. The spent flower base changes from green to light brown or rusty brown as it dries out.



Dried flower petals and old flowers.



Buckwheat

Eriogonum fasciculatum

RIPE FRUITS

One or more ripe fruits are visible on the plant. For *Eriogonum fasciculatum*, a fruit is considered ripe when the spent flower base enclosing it has turned light brown or rusty brown'



You may see open flowers continue to appear even after most of the fruit has formed.

RECENT FRUIT OR SEED DROP

One or more mature fruits or seeds have dropped or been removed from the plant since your last visit.

Do not include obviously immature fruits that have dropped before ripening caused by heavy rain or wind, or empty (aborted) fruits that remain on plants that long ago dropped all of their seeds.

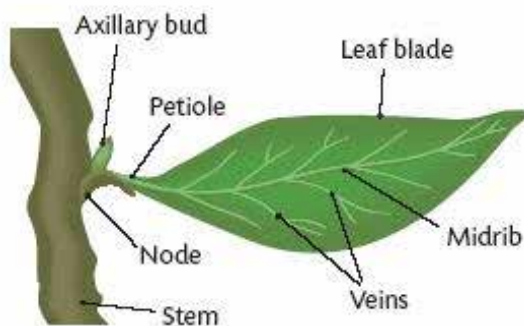


Coast Live Oak

Quercus agrifolia

BREAKING LEAF BUDS

One or more breaking leaf buds are visible on the plant. A leaf bud is considered “breaking” once a green leaf tip is visible at the end of the bud, but before the first leaf from the bud has unfolded to expose the leaf stalk (petiole) or leaf base.



Coast Live Oak

Quercus agrifolia

YOUNG LEAVES

One or more young, unfolded leaves are visible on the plant. A leaf is considered “young” and “unfolded” once its entire length has emerged from the breaking bud so that the leaf stalk (petiole) or leaf base is visible at its point of attachment to the stem, but before the leaf has reached full size or turned the darker green color or tougher texture of mature leaves on the plant. Do not include fully dried or dead leaves. In *Quercus agrifolia* the new, young leaves will have a red color from anthocyanidins; these red pigments help shield the new leaves from ultra-violet rays.



In each of the above the petiole can be seen and the leaf is fully unfolded



In this the leaf is not fully unfolded and the petiole is not visible.

Coast Live Oak

Quercus agrifolia

FLOWERS OR FLOWER BUDS

One or more fresh open or unopened flowers or flower buds are visible on the plant. Include flower buds that are still developing, but do not include wilted or dried flowers. For *Quercus agrifolia*, the male inflorescence is a catkin which is initially compact and stiff, but eventually unfolds to become longer and hang 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. Female flower buds are very hard to locate until they open!!!



Developing male catkins.



Female flower, note that the stigmas are green and not black (very hard to see in this photo). If they are black they should be counted as fruit.

Coast Live Oak

Quercus agrifolia

OPEN FLOWERS

One or more open, fresh flowers are visible on the plant. Flowers are considered “open” when the reproductive parts (male stamens or female pistils) are visible between or within unfolded or open flower parts (petals, floral tubes or sepals). Do not include wilted or dried flowers. For *Quercus agrifolia*, the male flowers will open once the initially 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

Male flowers (catkins)



Female flowers



If you can find very early fruits, as seen in the photo to the above, the ones with black stigmas are considered fruit and the ones with green stigma are open flowers,

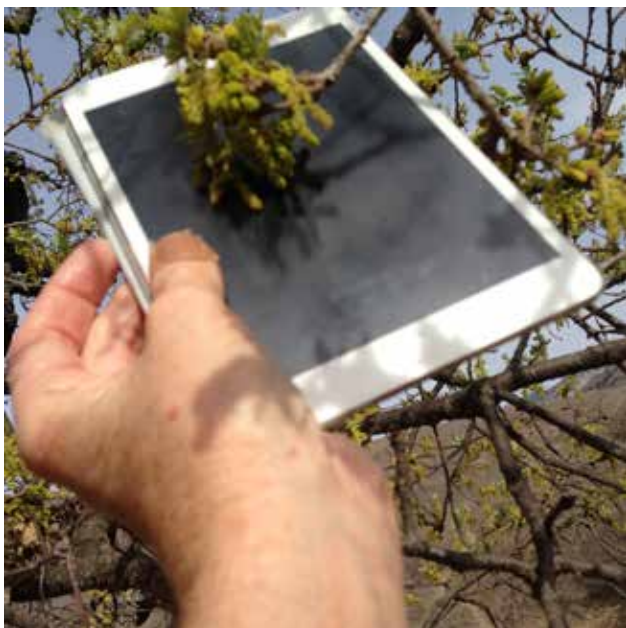


Coast Live Oak

Quercus agrifolia

POLLEN RELEASE

One or more flowers on the plant release visible pollen grains when gently shaken or blown into your palm or onto a dark surface.



Here pollen has been shaken against my iPad to observe release.

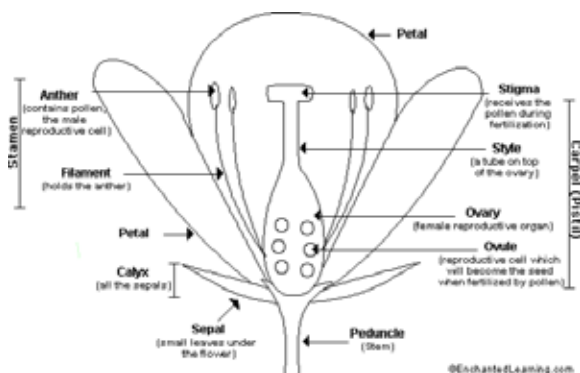


FRUITS

One or more fruits are visible on the plant. For *Quercus agrifolia*, the fruit is a nut (acorn), partially covered with a “cap”, that changes from green to light brown



If you can find very early fruits, as seen in the photo to the left, the ones with black stigmas are considered fruit and the ones with green stigma are open flowers,



Coast Live Oak

Quercus agrifolia

RIPE FRUITS

One or more ripe fruits are visible on the plant. For *Quercus agrifolia*, a fruit is considered ripe when it has turned light brown.



RECENT FRUIT OR SEED DROP

One or more mature fruits or seeds have dropped or been removed from the plant since your last visit.

Do not include obviously immature fruits that have dropped before ripening caused by heavy rain or wind, or empty (aborted) fruits that remain on plants that long ago dropped all of their seeds.

Look for fruit on the ground and empty caps. Scrub jays and Acorn woodpeckers will remove fruit from the tree so there may be a number of empty caps visible on the tree.

Coyote brush

Baccharis pilularis

YOUNG LEAVES

One or more young, unfolded leaves are visible on the plant. A leaf is considered “young” and “unfolded” once its entire length has emerged from the breaking bud so that the leaf stalk (petiole) or leaf base is visible at its point of attachment to the stem, but before the leaf has reached full size or turned the darker green color or tougher texture of mature leaves on the plant. Do not include fully dried or dead leaves.



New leaves are a lighter green and will appear fresh.

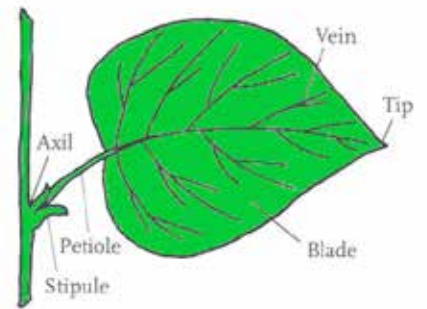


Petiole can be seen on the new growth at the end of stem.



Older leaves will be more leather like and have hard edges and have a dark green color.

LEAF PARTS



Coyote brush

Baccharis pilularis

FLOWERS OR FLOWER BUDS

One or more fresh open or unopened flowers or flower buds are visible on the plant. Include flower buds that are still developing, but do not include wilted or dried flowers. *Baccharis pilularis* is dioecious meaning one plant will be all male flowers and another plant will be all female flowers.



Male Flowers



Female Flowers



Do not include wilted or drying flowers

Coyote brush

Baccharis pilularis

OPEN FLOWERS

One or more open, fresh flowers are visible on the plant. Flowers are considered “open” when the reproductive parts (male stamens or female pistils) are visible between or within unfolded or open flower parts (petals, floral tubes or sepals). Do not include wilted or dried flowers.



Male flowers showing anthers some of which are showing pollen grains.



Female flowers showing Stigmas.



Do not include wilted or dried flowers.



Stigmas

Coyote brush

Baccharis pilularis

POLLEN RELEASE

One or more flowers on the plant release visible pollen grains when gently shaken or blown into your palm or onto a dark surface.



Coyote brush

Baccharis pilularis

FRUITS

One or more fruits are visible on the plant. For *Baccharis pilularis*, the fruit is very tiny and seed-like and is crowded into a small spent flower head. The seed-like fruit has a tuft of white hairs and changes from yellow-green to tan or light brown, and drops or is blown from the plant. Do not include empty flower heads that have already dropped all of their fruits.



Do not include empty flower heads that have already dropped all of their fruits.



BACK

Coyote brush

Baccharis pilularis

RIPE FRUITS

One or more ripe fruits are visible on the plant. For *Baccharis pilularis*, a fruit is considered ripe when it has turned tan or light brown, or when it readily drops or is blown from the spent flower head when touched. Do not include empty flower heads that have already dropped all of their fruits. *NOTE Fruit phenophase is nested; if you record Y for "ripe fruit" you should also record Y for "fruits."*



Coyote brush *Baccharis pilularis*

RECENT FRUIT OR SEED DROP

One or more mature fruits or seeds have dropped or been removed from the plant since your last visit. **Do not include obviously** immature fruits that have dropped before ripening caused by heavy rain or wind, or empty (aborted) fruits that remain on plants that long ago dropped all of their seeds.



Elderberry

Sambucus nigra

BREAKING LEAF BUDS

One or more breaking leaf buds are visible on the plant. A leaf bud is considered “breaking” once a green leaf tip is visible at the end of the bud, but before the first leaf from the bud has unfolded to expose the leaf stalk (petiole) or leaf base.



Elderberry

Sambucus nigra

LEAVES

One or more live, unfolded leaves are visible on the plant. A leaf is considered “unfolded” once its entire length has emerged from the breaking bud so that the leaf stalk (petiole) or leaf base is visible at its point of attachment to the stem. Do not include fully dried or dead leaves.



Petiole



Note that in each of the photos the petiole can be seen and the leaf is fully unfolded.

Elderberry

Sambucus nigra

INCREASING LEAF SIZE

A majority of leaves on the plant have not yet reached their full size and are still growing larger. Do not include new leaves that continue to emerge at the ends of elongating stems throughout the growing season.



As the plant continues to grow it will put out new growth on the branches, this is not counted as increasing leaf size. Only the initial emerging leaves is counted.

Elderberry

Sambucus nigra

COLORED LEAVES

One or more leaves (including any that have recently fallen from the plant) have turned to their late-season colors. Do not include fully dried or dead leaves that remain on the plant.



Do not include leaves that have been damaged by insect or breakage, we are looking for fall colors.

FALLING LEAVES

One or more leaves are falling or have recently fallen from the plant.

Once leaves begin to take on their fall colors start looking for falling leaves, shake a branch to see what falls off if you are in doubt.

Elderberry

Sambucus nigra

FLOWERS OR FLOWER BUDS

One or more fresh open or unopened flowers or flower buds are visible on the plant. Include flower buds that are still developing, but do not include wilted or dried flowers.



New flower buds



Progression from bud to flower to unopened flowers

Elderberry

Sambucus nigra

OPEN FLOWERS

One or more open, fresh flowers are visible on the plant. Flowers are considered “open” when the reproductive parts (male stamens or female pistils) are visible between or within unfolded or open flower parts (petals, floral tubes or sepals). Do not include wilted or dried flowers.



Flowers and unopened flower buds



Note that some of the flowers on the left have started to turn brown and don't look as fresh as the ones on the right

Elderberry

Sambucus nigra

FRUITS

One or more fruits are visible on the plant. For *Sambucus nigra* ssp' *cerulea*, the fruit is berry-like and changes from green to blue, bluish-black or blue with a whitish coating'



RIPE FRUITS

One or more ripe fruits are visible on the plant. For *Sambucus nigra* ssp *cerulea*, a fruit is considered ripe when it has turned blue, bluish-black or blue with a whitish coating'



Elderberry

Sambucus nigra

RECENT FRUIT OR SEED DROP

One or more mature fruits or seeds have dropped or been removed from the plant since your last visit.

Do not include obviously immature fruits that have dropped before ripening caused by heavy rain or wind, or empty (aborted) fruits that remain on plants that long ago dropped all of their seeds.



Fruit with fruit removal by birds.

Toyon

Heteromeles arbutifolia

YOUNG LEAVES

One or more young, unfolded leaves are visible on the plant. A leaf is considered “young” and “unfolded” once its entire length has emerged from the breaking bud so that the leaf stalk (petiole) or leaf base is visible at its point of attachment to the stem, but before the leaf has reached full size or turned the darker green color or tougher texture of mature leaves on the plant. Do not include fully dried or dead leaves.



The photos above has leaves breaking out of the bud but have not yet unfolded and the petiole is not showing so would not be counted as new leaves!



In these two examples the leaf is unfolded and the petiole is obvious. Note the color and texture difference between the older leaves.



To the left is an unopened leaf bud.

Toyon

Heteromeles arbutifolia

FLOWERS OR FLOWER BUDS

One or more fresh open or unopened flowers or flower buds are visible on the plant. Include flower buds that are still developing, but do not include wilted or dried flowers.



Flower buds



Flower buds almost open.



Open flowers and unopened flower buds.



Flower buds, open flowers and unripe fruit.

Toyon

Heteromeles arbutifolia

OPEN FLOWERS

One or more open, fresh flowers are visible on the plant. Flowers are considered “open” when the reproductive parts (male stamens or female pistils) are visible between or within unfolded or open flower parts (petals, floral tubes or sepals). Do not include wilted or dried flowers.



Toyon

Heteromeles arbutifolia

FRUITS

One or more fruits are visible on the plant. For *Heteromeles arbutifolia*, the fruit is a berry-like and changes from green to bright red



RIPE FRUITS

One or more ripe fruits are visible on the plant. For *Heteromeles arbutifolia*, a fruit is considered ripe when it has turned bright red



BACK

Toyon

Heteromeles arbutifolia

RECENT FRUIT OR SEED DROP

One or more mature fruits or seeds have dropped or been removed from the plant since your last visit.

Do not include obviously immature fruits that have dropped before ripening caused by heavy rain or wind, or empty (aborted) fruits that remain on plants that long ago dropped all of their seeds.



Valley Oak

Quercus lobata

BREAKING LEAF BUDS

One or more breaking leaf buds are visible on the plant. A leaf bud is considered “breaking” once a green leaf tip is visible at the end of the bud, but before the first leaf from the bud has unfolded to expose the leaf stalk (petiole) or leaf base.



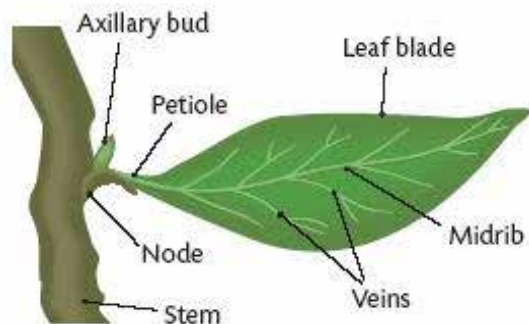
Example of breaking leaf bud on the left and a breaking flower (male) on the right.



Breaking leaf buds and flower buds



Leaf petioles can be seen in this example.



Breaking leaf buds, leaves and increasing leaf size all on one branch.

Valley Oak

Quercus lobata

LEAVES

One or more live, unfolded leaves are visible on the plant. A leaf is considered “unfolded” once its entire length has emerged from the breaking bud so that the leaf stalk (petiole) or leaf base is visible at its point of attachment to the stem. Do not include fully dried or dead leaves.



As you can see in these examples we have some leaves that are fully unfolded and some that are not. Remember look for the *petiole* and the attachment of the leaf to the stem.



Valley Oak

Quercus lobata

INCREASING LEAF SIZE

A majority of leaves on the plant have not yet reached their full size and are still growing larger. Do not include new leaves that continue to emerge at the ends of elongating stems throughout the growing season.

Each of these examples show leaves getting progressively larger



This final example is of leaves that are fully developed.

Valley Oak

Quercus lobata

COLORED LEAVES

One or more leaves (including any that have recently fallen from the plant) have turned to their late-season colors. Do not include fully dried or dead leaves that remain on the plant. Here we are talking about FALL colors not insect damaged leaves that might occur during the growing year.



FALLING LEAVES

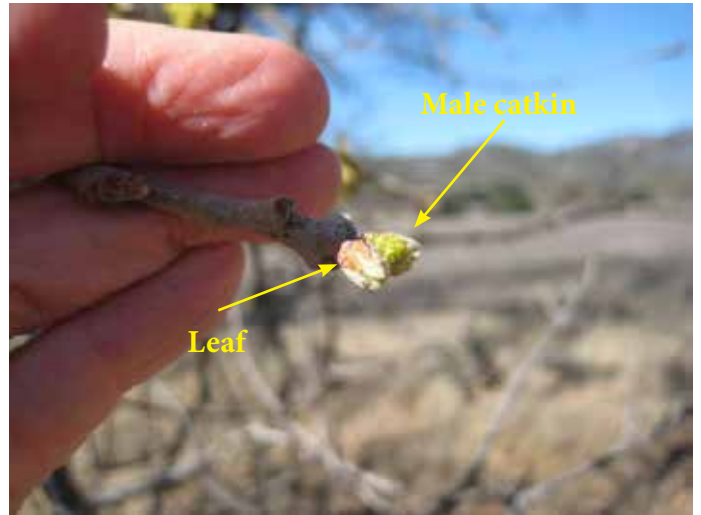
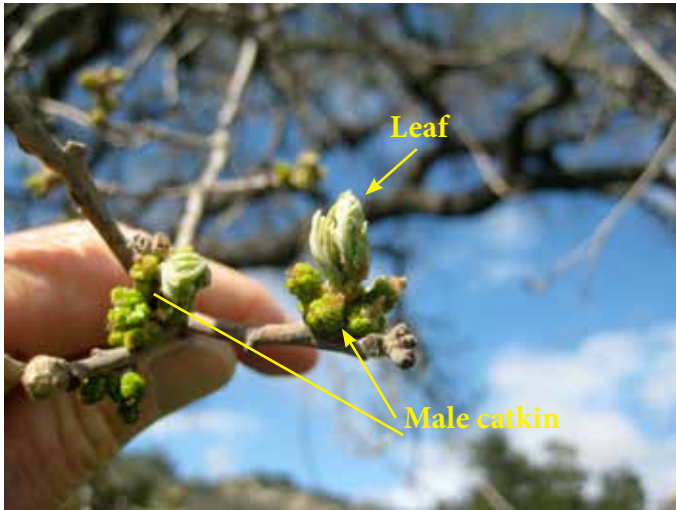
One or more leaves are falling or have recently fallen from the plant. When in doubt shake a branch to see what falls off!

Valley Oak

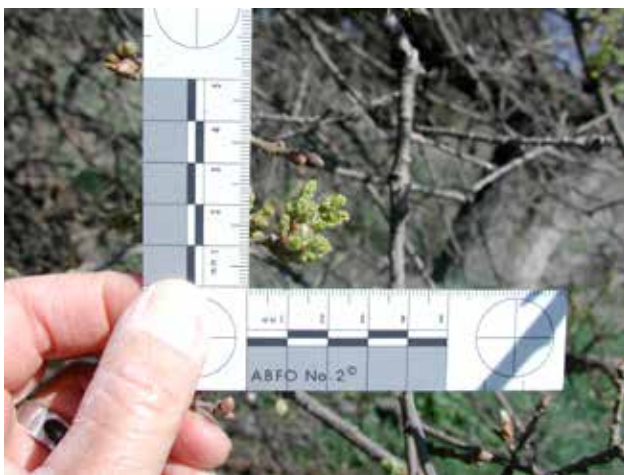
Quercus lobata

FLOWERS OR FLOWER BUDS

One or more fresh open or unopened flowers or flower buds are visible on the plant. Include flower buds that are still developing, but do not include wilted or dried flowers. For *Quercus lobata*, the male inflorescence is a catkin which is initially compact and stiff, but eventually unfolds to become longer and hang 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.



Both these examples have leaf bud and male flower (catkin) buds breaking.



When first emerging catkins are a small compact bundle.



Female flower buds are very hard to spot but can be found at the base of new leaves emerging from last year's buds.

Valley Oak

Quercus lobata

OPEN FLOWERS

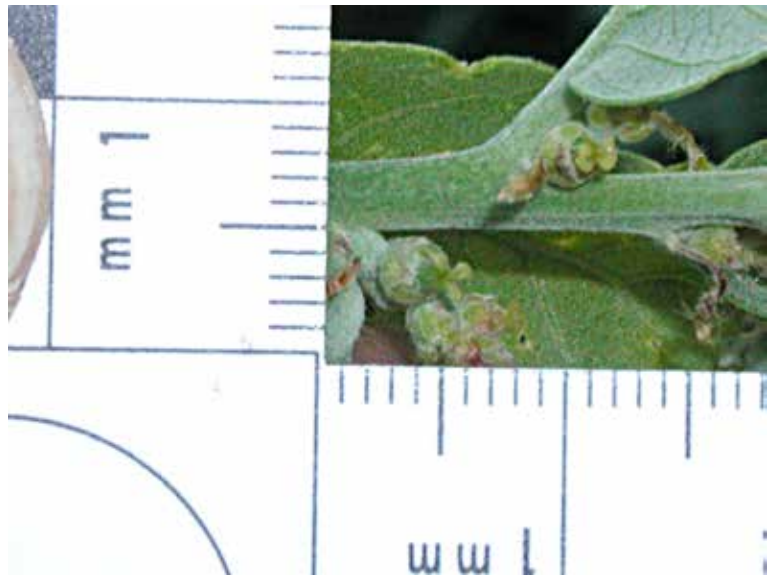
One or more open, fresh flowers are visible on the plant. Flowers are considered “open” when the reproductive parts (male stamens or female pistils) are visible between or within unfolded or open flower parts (petals, floral tubes or sepals). Do not include wilted or dried flowers. For *Quercus lobata*, the male flowers will open once the initially 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.

Male Catkins



As male catkins open they become long and pendulous to better catch the wind for pollen dispersal.

Female Flowers



Female flowers are small, hard to locate and can only be seen in the lower branches of the tree.

Valley Oak

Quercus lobata

POLLEN RELEASE

One or more flowers on the plant release visible pollen grains when gently shaken or blown into your palm or onto a dark surface.



Here is pictured mature catkins with you hand lens you should be able to see pollen on the individual flowers



Here I have brushed catkins against my phone to see the pollen.

FRUITS

One or more fruits are visible on the plant. For *Quercus lobata*, the fruit is a nut (acorn), partially covered with a “cap”, that changes from green to light brown’



Here is an example of a pollinated flower and an unpollinated flower.

The upper flower has black stigma and the lower is still green and unpollinated.

The upper would be counted as a fruit and the lower would not.



Valley Oak

Quercus lobata

RIPE FRUITS

One or more ripe fruits are visible on the plant. For *Quercus lobata*, a fruit is considered ripe when it has turned light brown'



RECENT FRUIT OR SEED DROP

One or more mature fruits or seeds have dropped or been removed from the plant since your last visit.

Do not include obviously immature fruits that have dropped before ripening caused by heavy rain or wind, or empty (aborted) fruits that remain on plants that long ago dropped all of their seeds.

