Phenophase Photo Guide

Quercus rubra (Northern red oak)

Why Observe?
Red oak is one of the most common and widespread forest trees found in New England.

Oaks support more than 530 species of moths and butterflies, which in turn feed birds and their young. The acorns of red oaks provide an important food source for deer, grey squirrels, and birds including blue jays, tufted titmice, red-headed and red-bellied woodpeckers, grackles, bobwhites, and white-breasted nuthatches. Raccoons and other mammals frequently make their dens in the hollows of mature trunks. Humans use the reddish-white wood for furniture, flooring, veneer, and other purposes.

Tips for Identification
Northern red oak is a deciduous tree 15 to 50 m tall (50-165 ft). Fall leaves are either brown or red in color with a leaf blade lengths of 120-200 mm (5-8 in) and width of 60-120 mm (2-5 in). The leaves are sinuate with edges that can be lobed or have teeth. The bark of mature trees may appear ridged or plated. Members of the red oak group often hybridize, producing trees with variably shaped leaves and acorns, which defy easy identification.

Habitat: Dry to moderately moist sites with a preference for deep soils such as forests, woodlands, and sometimes wetlands.

Special Consideration:
Individuals may not produce flowers every year. Acorns are produced on a 2-year cycle. Very sporadic producers and some years produce bumper crops.

Information presented in this guide was compiled from the USA-NPN, Native Plant Trust's GoBotany, the FEIS Database and EwA records.

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EwA Earthwise Aware

nature's notebook
A project of the USA-NPN

USA npn National Phenology Network

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.

Leaves

One or more live, unfolded leaves are visible on the plant. A leaf is considered "unfolded" once its entire length has emerged from a breaking bud, stem node, or growing stem tip 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.

Flowers or flower buds

One or more fresh open or unopened flowers or flower buds are visible on the plant. Include flower buds or inflorescences that are swelling or expanding, but do not include those that are tightly closed and not actively growing (dormant). Also do not include wilted or dried flowers.

For *Quercus rubra,* wind-pollinated flowers appear in late spring when the leaves are half-grown. The male inflorescence is a slender catkin that is initially compact but eventually unfolds to become longer and hang loosely from the branch. Female flowers are very solitary, inconspicuous small greenish petal-less inflorescences emerging from the growing stem at the point where a new leaf is attached.

Open flowers

One or more open, fresh flowers are visible on the plant. Do not include wilted or dried flowers. For *Quercus rubra*, 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.

Fruits

One or more fruits are visible on the plant. For *Quercus rubra*, the fruit is a nut (acorn), partially covered with a "cap", that changes from green to green-brown to brown, red-brown, or dark brown.

Colored leaves

One or more leaves show some of their typical late-season color, or yellow or brown due to drought or other stresses. Do not include small spots of color due to minor leaf damage, or dieback on branches that have broken or fully dried or dead leaves that remain on the plant.

Ripe fruits

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

Note: Do not include the fruits that you may find fallen at the bottom of the tree.

Phenophases not pictured: Increasing leaf size, Pollen release, Falling leaves, Recent fruit drop **If you are uncertain whether or not a phenophase is occurring, report a "?" until it becomes clear what you are observing after subsequent visits.**