

# Pin Oak

*Quercus palustris*

## Twig & Bud



multiple terminal buds that are small & pointed with scales that overlap like shingles

twig is slender & lustrous

leaf scar is half-ringed with more than 2 bundle scars

## Bark

bark is smooth & light gray-brown when first it young develops light, vertical ridges & shallow furrows with age



## Leaf

simple, alternate may display marcescence



irregularly deep U-shaped sinuses that extend close to the midrib

pale below with axillary tufts

5-7 bristle-tipped lobes

2-6 inches

## Habitat

shade intolerant; prefers rich, moist, acidic soils; often found in bordered communities that border swamps and rivers; rarely found in the NE; often planted at a street tree

## Flower



Species is monoecious

male flowers on slender, drooping catkins

1/2-4 inches



female flowers on new leafy shoots; short styles that are less than 1/4"

## Fruit



1/2 inch

acorn is nearly round with a shallow, flattened cap that has tight scales



# TREE OF THE MONTH

Pin Oak • *Quercus palustris*

ALSO KNOWN AS: SWAMP SPANISH OAK

Pin oak (*Quercus palustris*) is a medium-sized deciduous tree of the red oak group (subgenus *Erythrobalanus*) in the *Fagaceae* – or Beech – family. It typically grows 50 to 80 feet high and 2 to 3 feet in diameter but can grow up to 120 feet with a diameter of 5 feet. The tree usually has a single, upright, short trunk and a rounded or pyramidal crown with long, rigid branches – the lower drooping downward, the middle horizontal, and the upper ascending. The pin oak's numerous lower branches often get shaded out by other trees, leaving short, stiff, and bare pin-like stubs – hence the common name. The branches, twigs, and leaves grow in an alternate pattern.

Pin oak is a shade-intolerant bottomland tree and prefers rich, moist, acidic soils. It's often found in hardwood communities that border swamps and rivers and on glacial till plains in the north-central and eastern United States. It reaches its best development through the Ohio Valley and is rarely found naturally in Massachusetts. Common associates of the pin oak are sweetgum, white oak, swamp white oak, bur oak, swamp chestnut oak, American elm, slippery elm, red maple, black ash, green ash, shagbark hickory, American sycamore, and American hornbeam. Pin oak is a popular street tree because of its hardiness, rapid growth, and upright growth habit.

Pin oak leaves are simple and alternately arranged with a broadly oval outline and a wedge-shaped base where it meets the petiole. It has 5 or 7 bristle-tipped lobes that taper toward their tips and are separated by deep U-shaped sinuses that extend close to the midrib (compare to the C-shaped sinuses of the scarlet oak with lobes sometimes almost touching). The leaf is typically 3 to 5 inches long and 2 to 5 inches wide. It's glossy and smooth above, and the bottom of the leaf is a lighter color and mostly smooth except for tufts of hair in the vein axils. Like most species in the *Quercus* genus, the pin oak can retain its dead leaves during the winter, a trait known as **marcescence**, but they do not always display this characteristic.

On young trees, the bark is smooth and light gray-brown but develops tight, vertical ridges and shallow furrows as the tree ages. Pin oak twigs are slender, smooth, red-brown, and lustrous with multiple terminal buds. The pith is 5-angled (or star-shaped) and pale brown. The winter buds are tiny (about 1/8") with blunt points, and each has three or more scales that overlap like shingles. The leaf scar is half-round and has more than three bundle traces.

Pin oaks are monoecious, meaning an individual tree produces both male and female flowers; both appear in the spring with the leaves. Male flowers are produced on drooping **catkins** that are yellow-green and 1 1/2 – 4" long. Female flowers appear on new leafy growth as short spikes that are less than 3/4". Pollination occurs by wind. Like all oaks, the pin oak produces acorns that mature during autumn. They're about 1/2" long and **globose** or subglobose in shape. The acorns are striped with light and dark brown vertical lines. It has a shallow, flattened cap that has appressed scales, and it covers about one-fourth of the acorn.

Pin oak acorns are a particularly important food source for many ducks; they're also eaten by songbirds, wild turkeys, white-tailed deer, squirrels, and other small rodents. The pin oak also supports a wide variety of moths & butterflies.



OPPOSITE BRANCHING PATTERN

ALTERNATE BRANCHING PATTERN

WHORLED BRANCHING PATTERN

Pin oak's species epithet, *palustris*, comes from the Latin word "palus", which translates to "the swamp" or "marsh" and refers to this tree's typical native habitat. The genus name *Quercus* comes from the classical Latin name for oak trees. The pin oak is easily confused with scarlet oak, Nuttall oak, black oak, and northern pin oak.

Identifying oak trees to species can be challenging, and it's further complicated due to oaks often **hybridizing** with one another. A helpful trick to narrowing down your choices is distinguishing whether it's in the red oak group (section *Lobatae*) or the white oak group (section *Quercus*). One main distinction between the two groups is the leaves: red oaks have pointed, bristle-tipped lobes, whereas white oaks have smooth, rounded lobes. This characteristic alone will help you get one step closer to IDing your oak trees!



Tree of the Month is sponsored by Berkshire Environmental Action Team, a 501(c)(3) non-profit organization located in Pittsfield, MA. Find more Trees of the Month at [www.chebustree.org](http://www.chebustree.org)

**petiole**: the stalk that joins a leaf to a stem

**marcescence**: the withering and persistence of plant leaves that normally fall off

**leaf scar**: the mark left by a leaf after it falls off the twig

**bundle trace**: tiny dots within the borders of each leaf scar

**pith**: soft region found in the central portion of the stem

**terminal bud**: a leaf bud that is located at the top (or end) of a stem

**catkin**: a slim, cylindrical flower cluster with inconspicuous or no petals

**globose**: having the form of a globe

**hybridizing**: to breed with an individual of a separate species