

Eastern Cottonwood

Populus deltoides

Twig & Bud



gummy buds that are pointy & resinous; three or more bud scales that overlap like shingles

twigs are stout, angled, & often have vertical ridges

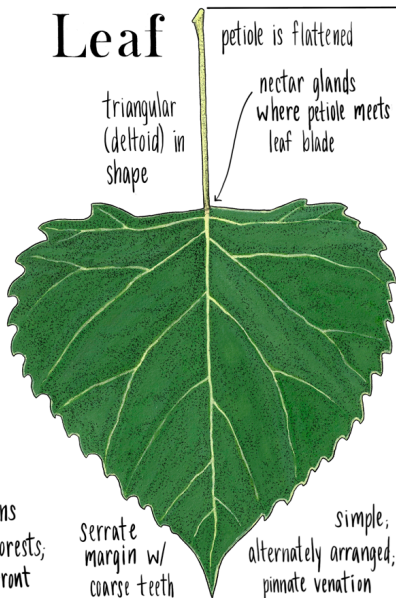


star-shaped pith

Bark

smooth, whitish to pale green when young; maturing to ash-gray w/ thick ridges & deep furrows

Leaf



petiole is flattened

nectar glands where petiole meets leaf blade

triangular (deltoid) in shape

3-6 inches

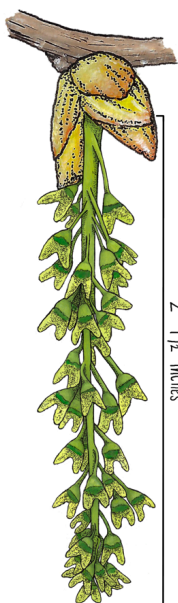
serrate margin w/ coarse teeth

simple, alternately arranged, pinnate venation

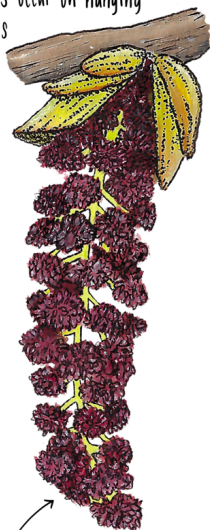
Habitat

often found in floodplains & bottomland hardwood forests; a dominant species in riverfront forests in the eastern U.S.

Flower



dioecious; male & female flowers occur on hanging catkins



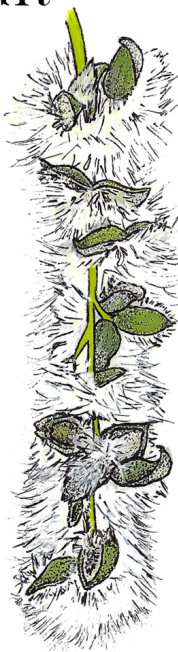
male catkins wither away; females elongate to 4-6"

Fruit



ellipsoid, dehiscent capsules clustered on catkins

releases ~30-50 cottony seeds





TREE OF THE MONTH

Eastern Cottonwood • *Populus deltoides* subsp. *deltoides*

ALSO KNOWN AS: COMMON COTTONWOOD, NECKLACE POPLAR

Eastern Cottonwood (*Populus deltoides*) is a large, fast-growing but short-lived, deciduous tree. It has an average height of around 70 to 100 feet, sometimes attaining heights up to 190 feet. In open areas, eastern cottonwood has a large trunk with branches forming near the base and a spreading crown that arches at the tips, often creating a vase-shaped outline. The branches, twigs, and leaves grow in an alternate pattern.

Eastern cottonwood prefers moist, well-drained sands or silts near streams. It is often found in floodplains and bottomland hardwood forests and is a dominant species in riverfront forests in the eastern United States. Three subspecies are recognized in North America: subsp. *deltoides* (Eastern cottonwood) in southern and eastern North America, subsp. *moniflora* (plains cottonwood) found in the central US and Canada, and subsp. *wislizeni* (Rio Grande cottonwood), which is limited to the southwestern U.S.

Eastern cottonwood leaves are simple and alternately arranged with a broadly deltoid (triangular) shape. The leaf edge is **serrated** with blunt, rounded teeth and tapers to an abrupt, pointed tip. It's 3 to 6 inches long and nearly as wide. The base of the leaf (the end where the blade meets the **petiole**) is mostly flat across. It has a flat petiole, and there are 2 to 3 small glands where the petiole meets the base of the leaf. The leaves are glabrous (smooth & hairless) and dark green above, with paler green underleaves. Sapling leaves typically display red petioles and red veins.

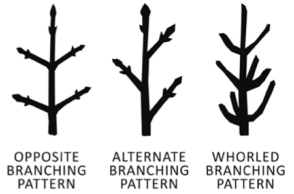
On young trees, the bark is smooth and a whitish or pale greenish color — very similar to the bark of the closely related aspens. Mature trees are ash gray with thick, blocky ridges and deep furrows. Eastern cottonwood twigs are stout, angled, and often have vertical ridges. They vary in color from yellow-green to orange-brown and mature to gray, and have many small, pale lenticels. The leaf scar is vaguely triangular, with three **bundle traces**. The twig also has a stellate (star-shaped) **pith**, which can be seen in a cross-section. The buds are large and pointy, with sticky, resinous terminal buds. There are three or more scales that overlap like shingles on the winter bud.

Eastern cottonwoods are dioecious, meaning that individual trees either produce all male flowers or all female flowers. Both flowers appear before the leaves and are borne on drooping **catkins** that bloom during April and May. Male flowers have tiers of burgundy red stamens that are bunched together, while female flowers are sparse and yellowish green. Pollination occurs by the wind. Fruit of eastern cottonwood are egg-shaped, **dehiscent** capsules clustered on drooping catkins. When mature, the fruit splits open and releases copious amounts of cottony seeds to the wind during June and July, which can resemble falling snow. These cotton-like seeds are what give this tree its common name.

Eastern cottonwood is a larval **host plant** for mourning cloak, red-spotted purple, vicceory, and tiger swallowtail butterflies. The bark and leaves of seedlings and saplings are eaten by field mice, rabbits, and deer. Many bird species also gather nesting materials from this species. Eastern cottonwood is often confused with big-toothed aspen, balsam poplar, *Populus x jackii* (the hybrid of the balsam poplar and eastern cottonwood), quaking aspen, and swamp cottonwood.

serrated: having a jagged edge; saw-like
lenticels: raised pores in the stem of a woody plant that allows gas exchange
petiole: the stalk that joins a leaf to a stem
leaf scar: the mark left by a leaf after it falls off the twig

pith: soft region found in the central portion of the stem
catkin: a slim, cylindrical flower cluster with inconspicuous or no petals
dehiscent: (of a fruit) characterized by splitting or bursting open
host plant: a plant that provides organisms with food and shelter



Eastern cottonwood's species epithet, *deltoides*, refers to the tree's triangular shaped leaves. The genus name, *Populus*, is an Old Latin word that comes from the Proto-Italic word *poplos*, which means "army." *Populus* translates to "a nation of people" and possibly refers to the trees often being planted around public meeting places in Roman times.

Although considered a hardwood, the wood of the eastern cottonwood is actually among the softest of woods. Interestingly, no definitive degree of hardness distinguishes the "hardwoods" from the "softwoods." The only true distinction that separates these categories is whether a tree is a gymnosperm or angiosperm — a grouping that has nothing to do with the true hardness or softness of a tree's wood. However, there is a developed system for defining the hardness of tree wood: the Janka hardness scale.



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.thebeatnews.org