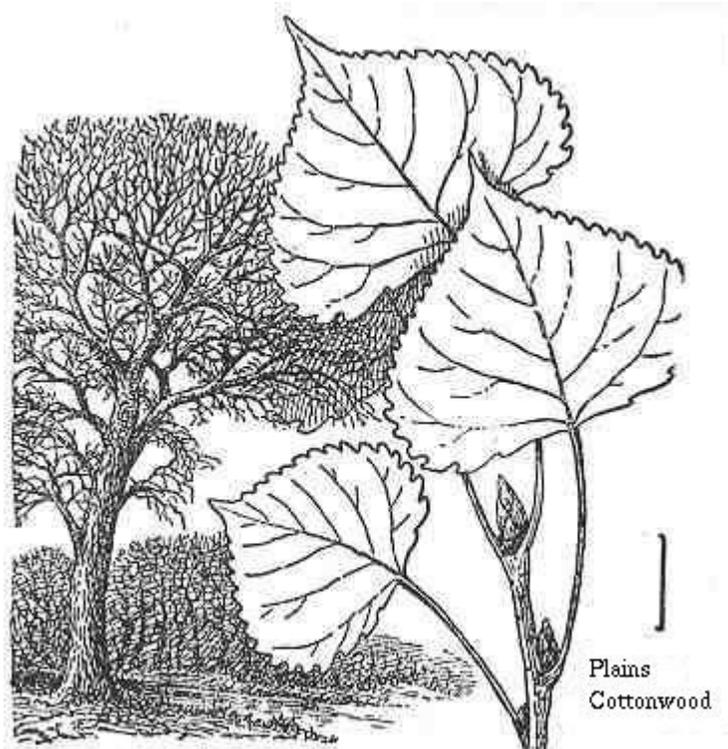


Plains Cottonwood



From the upper branches of the cottonwood trees overhead -- whose shimmering, tremulous leaves are hardly ever quiet, but if the wind stirs at all, rustle and quiver and sigh all day long -- comes now and then the soft melancholy cooing of the mourning dove, whose voice always seems far away.

– Theodore Roosevelt, *Ranch Life and the Hunting Trail*

The Plains cottonwood is the great tree of the American prairies. No other tree approaches its stature on the grasslands that sweep five hundred miles from the ninety-eighth meridian to the foot of the Rockies. It is the big tree on the banks of the mightiest rivers of the great plains, and the on the smallest streams. It was the only significant tree to the native Indians of these regions, and to the pioneers.

The Plains cottonwood is also the largest broadleaf tree of Colorado, New Mexico, and Wyoming. This tree grows from the eastern plains to 6500 feet (2000 m) in elevation, and possibly higher in canyons of the eastern slope of Colorado. Fairly young trees have a straight columnar trunk with a rounded crown; old trees are massive with heavy, wide-spreading branches. It can occasionally grow to 6 feet (1.8 m) or more in trunk diameter. The largest recorded Plains cottonwood grows a few miles north of Boulder, Colorado, and is about 23 feet (7 m) in circumference.

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The cottonwood is short-lived, for a tree: few exceed one hundred years by much. After a century or so even the largest limbs begin to die naturally. The thick bark sheds off over a period of a few years, leaving bare white limbs, the massive skeleton of the tree. Often the core of the tree rots away before



the living tissue under the bark dies, especially if the tree is damaged by fire or loss of a limb. Wind or decay will eventually bring the limbs, and sometimes the entire tree, to the ground. High winds blowing out of the mountains sometimes blow over live trees as well as dead ones, the weak shallow roots snapping off. When an entire tree with dead limbs is blown over the limbs shatter, scattering wood fragments of every size in all directions. Old-time westerners know not to hold a picnic under a cottonwood with dead limbs, wind or no wind.

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Occasionally cottonwood trees can reach an age well over one hundred years. Paul Cutright, when preparing his book *Lewis and Clark: Pioneering Naturalists*, found two large and very old cottonwoods in an otherwise treeless location in northern Montana where Meriwether Lewis had camped with three other explorers and eight Blackfeet warriors by two cottonwood trees, near Two Medicine Creek. If they still survive, and if they are the same trees, they are now over 204 years old.

From early June to mid-July female trees release clouds of cottony or silky white fibers that carry the tiny brown seeds from small green capsules in clusters hanging from the twigs. Some years produce much heavier crops of this "cotton."

Though the wood of this tree is moderately weak, it was the only wood available to early settlers on the plains and was sometimes pressed into use as timber. The vegas, horizontal roof beams, of the adobe dwellings characteristic of the southwest are sometimes made of cottonwood. Fine examples are the vegas of the reconstructed Bent's Fort near La Junta on the Arkansas River. Cottonwood is right for fires in tipis, since it does not crackle and throw sparks. Cottonwood is easy to carve and cottonwood root is the traditional material for the Kachina dolls of the Hopi of northern New Mexico. Drums are made of segments of hollow logs. Cottonwood provides food for beavers (both young bark and leaves) and stems for beaver dams and lodges. Deer and elk browse the twigs.

Cottonwood leaves brush together and make a distinctive rustling or whispering sound in the constant south wind of the prairie summer, a sound not unlike the sound of the sea at a distance. Adults who grew up on prairie farms always remember the sound of the cottonwoods through their windows on summer nights. Fresh young green cottonwood bark provided forage for the horses of the Indians, mountainmen, and early settlers on their way to the Colorado mountains, if better fare was not available. The wood fueled their campfires, making a rather odd-smelling smoke. The partly-fictional story of one Plains cottonwood tree that was a solitary sentinel along the Santa Fe trail is told in Holling Clancy Holling's book *Tree in the Trail*, intended for grade school readers but full of fascinating details and illustrations. Kathleen Cain's *The Cottonwood Tree* has everything a tree enthusiast could want to know about cottonwoods.

Cottonwoods and willows are now common along the rivers and streams from the base of the foothills eastward across the plains. This was not the case before the settlers arrived: early reports show only isolated tree groves in these areas. The cause of the lack of trees is three-fold. In pre-settlement days, prairie grass fires killed seedlings, and the enormous herds of buffalo trampled and grazed much of whatever escaped the fires. The water flow in the rivers varied from huge spring runoffs after snowmelt in the mountains, to periods in late summer when even the Platte River was completely dry. Not only was drought a severe trial for the trees, the spring runoffs were so powerful that the river bottoms were scoured out, washing away the sand bars and banks along with any young trees growing there.

In the past century these conditions have changed completely. The plains fires and buffalo are gone. Water is controlled: in the South Platte drainage basin in Colorado alone there are over 700 dams and reservoirs. Water flow, while hardly uniform, is always present. Corridors of trees now grow along the rivers, reaching from forests along the Mississippi and Missouri Rivers across the plains to the foothills of Colorado and Wyoming. Eastern plants and animals have followed these sheltering corridors to the Rockies. The Red or Fox squirrel, for example, is now a common native here, having crossed the prairies in a the long and narrow cottonwood and willow "corridor" forests.

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The botanical name is *Populus deltoides* H. Marshall subsp. *monilifera* (Aiton) Eckenwalder ; *deltoides* refers to the characteristic delta-shaped or triangular leaf, and *monilifera* describing the linear necklace-like strand of seed pods.

The Plains cottonwood is found in Colorado only on the eastern side of the mountains and foothills. In New Mexico, along the Rio Grande, and in western Colorado and Utah the Rio Grande cottonwood (*Populus deltoides* H. Marshall subsp. *wislizenii* (S. Watson) Eckenwalder) grows, a similar tree.

Leaves

The glossy leaf blades are 3 to 6 inches (7.5 to 15 cm) long and wide, in a broad triangle or heart-shaped; leaf stalk 2 to 3.5 inches (5 to 9 cm) long; the leaf stalks are often as long as the blades. Coarse-toothed, but there are nine or more teeth per side on the leaf; the Rio Grande cottonwood has fewer teeth. The leaf stalks are flattened, which allows the leaves to flutter back and forth in even a slight breeze, making a distinctive rustling sound. Glands appear at upper end of leaf stalk next to leaf base; this is a small feature but used by botanists to distinguish between cottonwoods.

Fruit

Female trees produce green capsules, maturing around the first of June, which split and release clouds of seeds and "cotton" soon after. The capsules have a narrowed point at the outer end; the cotton is filaments to carry seeds on the wind. Male trees make no cotton, but they do make blooms in early May which have a purple color, especially when wet.

Stems and buds:

Twigs are yellowish; end buds 5/8 to 1 inch (15 to 25 mm) long; sticky but not fragrant. Buds are yellow-green or olive-green, thicker than the twigs they grow from, and covered with a sticky resin. In winter the resin is thin, hard, and brittle and has no odor. Plains cottonwood buds are so large then can be seen when the tree is in silhouette at a distance; not the case for Narrowleaf cottonwood.

Bark:

Pale yellow-green, thin, and smooth when young; old bark is gray and deeply furrowed, leaving long vertical flat-topped ridges of thick bark. Bark on the largest trees is hard and dense and can reach 6 inches (15 cm) in thickness. Bark is furrowed almost the entire length of the branches. When the large limbs die the thick bark falls off in long hard segments.

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