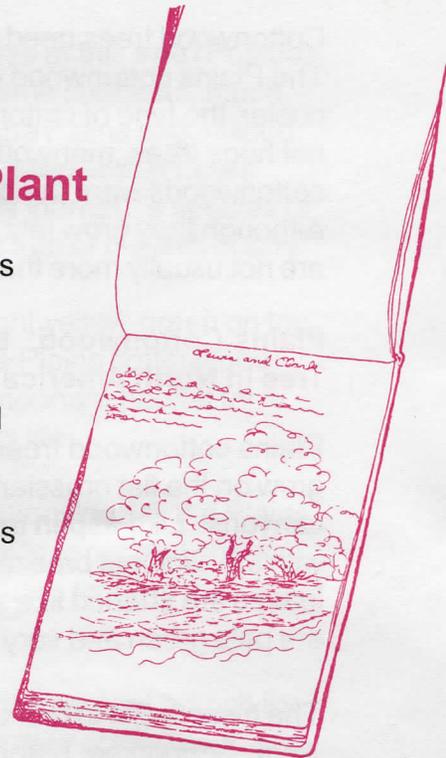


NATURE DETECTIVES

Spring 2004

Cottonwood Trees - Discovering a Special Plant

Meriwether Lewis, who traveled across North America two hundred years ago with his Corps of Discovery, was a nature detective with great observation skills. He carefully wrote down the things he saw in his journal, often describing plants and animals that few people knew about. In that journal he described the cottonwood trees he found and explained their importance to his journey. In fact, without cottonwood trees, Lewis and William Clark, his co-leader, may not have finished their great trip to the Pacific Ocean. They camped under cottonwood trees, built their fires with cottonwood logs, fed their horses in winter with cottonwood bark, and knew that wherever cottonwood trees grew, they would find water. They built boats and wagons of cottonwood logs, and cut wagon wheels from a huge cottonwood tree trunk.



Native tribes who lived in the western part of North America were well aware of the value of cottonwood trees. In fact, people of the Mandan tribe taught Lewis that when the prairie grass is covered with snow, horses thrive on the sweet inner bark of the cottonwood.

Animals of all kinds depend on cottonwoods. The trees are used by animals for nest building, for dens, for finding food and water, and for shelter from the sun and wind. Even fish hang out in the cool water shaded by the trees.

See if you can explain each line in this poem, which could perfectly describe a cottonwood tree and the ways various animals enjoy the tree. The poem is a question to a newly planted tree and the answer the tree might give back.



SCREECH OWL
& PLAINS COTTONWOOD
IN WINTER

Dear Little Tree

Dear little tree that we plant today,
What will you be when we're old and gray?

The tree answers:
"The savings bank of the squirrel and mouse.
For robin and wren an apartment house,
The dressing room of the butterfly's ball,
The locust's and katydid's concert hall,
The schoolboy's ladder in pleasant June,
The schoolgirl's tent in the July noon,
And my leaves shall whisper them merrily
A tale of the children who planted me."

Unknown author

Two Different Cottonwood Trees – Two Different Habitats

Cottonwood trees need lots of water to survive so they only grow where water flows year round. The Plains cottonwood grows at lower elevations. As the ground gets higher and the air cooler, the type of cottonwood that grows is the Narrowleaf cottonwood. Cottonwood trees are not huge trees, many other trees grow larger, but when early pioneers settled this land, cottonwoods were the biggest and often the only trees growing along our streams and rivers. Although they grow fast, they don't live as long as many other trees. The oldest cottonwoods are not usually more than a hundred to a hundred and fifty years old.

Plains Cottonwood: the Fastest Growing Tree in North America

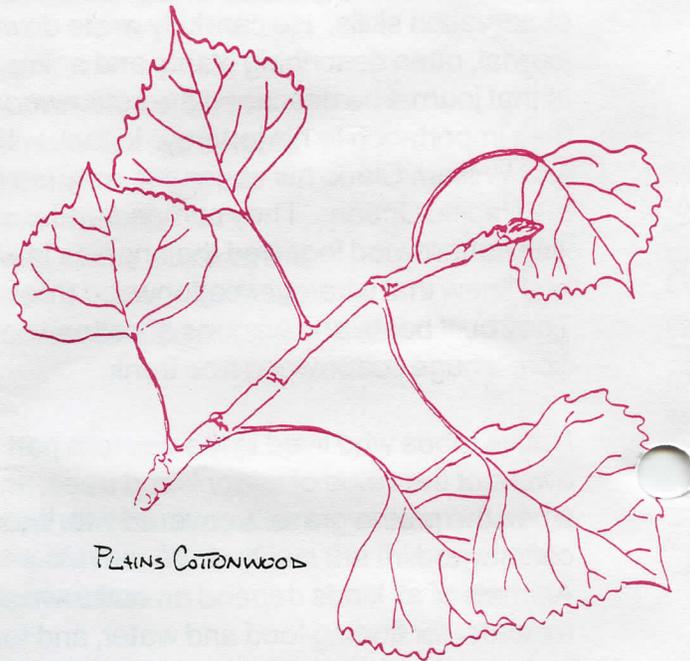
Plains cottonwood trees (*Populus deltoides*) grow on the flat grasslands and at the mouth of canyons. Like aspen trees, their leaves tremble with the slightest breeze. The thick, three-inch leaves are shaped like a rounded triangle and are pale green and very shiny.

The trees begin to leaf out around the end of April. Springtime, before the leaves are out, is the easiest time to glimpse the many animals and insects that depend on the cottonwood tree. Look for ants, beetles, and caterpillars nibbling at the new leaf buds. The delicate spring growth is a favorite of some birds, and other birds dart in to eat the bugs that are eating the leaves.

In fact, most Boulder County birds and many other animals, as well, will spend at least part of their lives near a cottonwood tree. Like the horses of the Mandan tribe, mule deer and white-tailed deer nibble the tender inner bark in fall and winter. Porcupines like to dine on cottonwood bark too. Deer mice gnaw on tender new shoots in spring while keeping an eye out for hungry red foxes, skunks, or weasels. Lizards scoot over the tree roots searching for worms. Slithering garter snakes hunt dinner under the trees too.

The inner wood of the cottonwood tree is soft compared to many trees so the inside of a dead branch or trunk rots quickly. These dead branches or trunks become hollow making them good den sites for squirrels, raccoons, opossums, even honeybees! Hawks and woodpeckers find good housing opportunities in the cottonwood tree. So do golden eagles, screech-owls and swallows.

Orioles weave their hanging nests to dangle from cottonwood branches. Watch for the bright flash of a yellow warbler flitting to its nest hidden in the leaves. The trees provide nest sites for many kinds of songbirds.





POPULUS ANGSTIFOLIA
NARROWLEAF COTTONWOODS

Narrowleaf Cottonwood Tree: Mountain Cousin

The two or three-inch leaves of this tree (*Populus angustifolia*) are, as the name suggests, much thinner than the leaves of the Plains cottonwood. On the 6th of June in 1805, Meriwether Lewis wrote this description in his journal, "a species of cottonwood with a leaf like that of the wild cherry."

The narrow leaves are bright yellow-green on top, paler underneath. Like the Plains cottonwood, the Narrowleaf provides important habitat for a variety of animal and insect life.

Lewis noted in his journal that beavers seem to prefer the Narrowleaf cottonwood to the Plains type, and he guessed that the preference is because of the Narrowleaf's "deeper and softer bark." Beavers use cottonwood tree branches along with aspen and willows limbs in the construction of their dams and lodges.

Birds such as chickadees, Wilson's warblers, and goldfinches look for just the right branch for their nest platforms. Tree swallows search for holes in the trunk to make their grassy nest, and downy woodpeckers hammer out their own nest holes in old cottonwood trunks.

Elk munch Narrowleaf cottonwood bark and twigs. Black bears and striped skunks look for insects in rotting cottonwood logs. Belted kingfishers search the shaded water beneath the trees for fish to catch. They bring their catches back to a favorite branch for streamside dining.

Many of the same animals that live in the Plains cottonwood habitat also live in the mountainous Narrowleaf habitat.

Raccoons and mule deer, for example, are found at higher and lower elevations.

And underneath the leaf litter on the ground below either tree, a tiger salamander might make his home.



TIGER SALAMANDER

FEMALE
CATKIN



Catkins and Cotton

Cottonwood trees don't make real cotton of the kind that is used to make tee shirts and other clothing. Instead, the cottonwood gets its name from the fuzzy white fluff on its tiny seeds. The seeds are made in the flowers of the female cottonwood trees.

The flower buds first start to open in April before the leaves appear. The flower buds dangle down from the twigs like a string of green beads. As the white-tufted seeds begin to burst from their green covers, the buds start to look a little like fuzzy kitten tails, which gives them the name "catkins."

The male trees have catkins too, but they look very different from the female catkins. The numerous male cottonwood catkins are much shorter than the female cottonwood catkins and they are red. They look more like red tassels you might find on the corners of pillows than like fluffy kitten tails. The male flowers make pollen, which blows on the wind to the female flowers. The female flowers need the pollen to make cottonwood seeds. Wind scatters the seeds. The fluff on the seeds catches the wind so the seed is carried far from the mother tree. If it lands on a place with water, it may sprout and become a new cottonwood tree.

MALE
CATKIN



Shhh! Nature Detective At Work

Be a nature observer like Meriwether Lewis. Find a place that has more than one cottonwood tree. Bring along a journal or paper, a pencil or pen, and a crayon. Write down the things you discover about the trees. Here are some ideas of things to notice.

- Count how many of the trees are males and how many are females. (For this, you need to see the trees in spring when they still have their catkins.)
- Sit quietly in a safe, comfortable place. Watch for birds using the trees. Are they building a nest, resting, or eating? Do you see any other animals near the trees? Record what the animals are doing in your journal.
- Hold a sheet of paper against the trunk of the tree and, using the whole side of a crayon, rub the crayon against the paper. Can you see the pattern of the bark in your rubbing?
- Are the cottony seeds blowing away from their mother tree? How far?

