

Narrowleaf Cottonwood



- Growth Form: ovoid to irregular
- Crown Density: moderate
- Size: to 50 feet high to 30 foot spread
- Drought Resistance: fair
- Cold Hardiness: excellent
- Growth Rate: rapid
- Life Span: moderate
- Elevational Range: 5,000 to 9,500 feet
- Soil Conditions: tolerates alkaline well
- Possible Insect Problems: blotchmine beetle
- Possible Disease Problems: cytospora canker; bacterial wetwood
- Wildlife Value: moderate: nesting and roosting cover; buds catkins and twigs for food value
- Seasonal Color: yellow
- Miscellany: native; very weak wood



Narrowleaf Cottonwood

Populus angustifolia



ZONE: 3-6
HEIGHT: 40-60'
SPREAD: 30-40'

SHAPE: Slender Oval, Narrow Crown
EXPOSURE: Full Sun to Slightly Shady
GROWTH RATE: Fast

SOILS: Grows well in wide range of soils as long as it has LOTS of water.

DESCRIPTION:

- This wetland species is often found along streams and on sand bars. In nature, the tree forms extensive stands and commonly grows tightly packed, slender and to 60 ft. tall. Green leaves cover most trees from bottom to top because the trunk has a raggedly collection of small limbs, all of which produce leaves. Narrowleaf Cottonwoods (NLCW) are in the Willow family and, because of their long narrow leaves, young trees are often mistaken for willows. They can mature into large shade trees. Very old NLCW

often lose their numerous lower branches. Tolerates extreme cold. Root suckers can be a maintenance problem. The cottony seed from female trees can also be an issue.

WILDLIFE VALUE:

- Rabbits, deer, and moose browse on the twigs and leaves. Quail and grouse eat the buds & catkins. These trees provide cover for squirrels, deer, bears, and many bird species.

HISTORY / LORE / USE:

- In 1805, Lewis & Clark described the NLCW they encountered on the Missouri River as “a species of cottonwood with a leaf like that of a wild cherry (chokecherry.) It is used for soil stabilization in streambank reclamation due to its aggressively spreading root system. People wanting shade as quickly as possible turn to this tree due its fast growth rate & dense upright crown. When left in its native form, the mass of interlaced branches and leaves from the ground up, work well in privacy screens and windbreaks.

MOISTURE:

- Must have moist soil throughout the growing season.

LEAVES / NEEDLES:

- Alternate, simple, narrow, lance-shaped leaves similar to those of a willow. They are bright green becoming rich yellow during fall.

BUDS:

- In late winter, ¼” to ½” long buds are dark brown and coated with a gummy resin with an aromatic odor. They have five overlapping bud scales whereas willows only have one. They are sharp pointed and slender, not plump like those on Plains cottonwoods.

FLOWERS:

- Fruit is an oval capsule, ¼” long, several together on a slender stalk like a string of beads, seeds tufted, small, light brown.

NARROWLEAF COTTONWOOD

Populus angustifolia James

Plant Symbol = POAN3

Contributed by: USDA NRCS National Plant Data Center & the Biota of North America Program



@ PLANTS

Alternate common names

Bitter cottonwood, willow cottonwood, willow-leaf cottonwood, mountain cottonwood, Rydberg cottonwood, smooth-bark cottonwood

Uses

Industry: Wood of narrow-leaf cottonwood is susceptible to decay and warps when cut into lumber. Because of this and its relative scarcity, it is commercially unimportant – used mostly for fenceposts and fuel, less commonly for crating, boxes, pallets, plywood veneer, and pulpwood; wood shavings are used for bedding, insulation, and animal food supplements.

Wildlife: Narrow-leaf cottonwood provides habitat, cover, and food for a diversity of wildlife. Common residents include squirrels, aquatic fur bearers, bears, white-tailed deer, and many bird species. Twigs and leaves are browsed by rabbits, deer, and moose and buds and catkins are eaten by quail and grouse. Beaver cut all sizes of cottonwoods to build and maintain lodges and dams and use the bark for immediate food or storage in winter caches.

Conservation: Narrow-leaf cottonwood is planted as a fast-growing ornamental tree in western US cities. These trees can be used at high elevations and are useful in landscaping on deer winter ranges since deer will not damage them through overbrowsing. The species was early encountered (in 1805) by the Lewis and Clark expedition, who observed that horses would not eat it.

The aggressively spreading root system of narrow-leaf cottonwood makes it useful for soil stabilization in erosion control and streambank reclamation projects. This same feature, however, may be a liability in urban areas where the roots may clog drains and sewers.

Ethnobotanic: Native Americans used young cottonwood shoots to make baskets.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status, such as, state noxious status and wetland indicator values.

Description

General: Willow Family (Salicaceae). Native trees up to 15-20 m tall, single-stemmed with slender, upright branches forming a narrowly spreading crown. The bark is yellowish green to grayish brown, smooth on upper portions and furrowed into broad, flat ridges on older lower portions. Leaves are deciduous, simple, alternate, lanceolate to ovate-lanceolate, rounded at base, 5-9(-13) cm long, 1-2.5 cm wide, hairless or nearly so, the margins glandular-toothed, dark green above and slightly paler beneath, turning dull yellow in autumn, the petioles less than 15 mm long, about 1/3 as long as the blade, flattened only near the base. Flowers male (staminate) and female (pistillate), are on separate trees (the species dioecious). Each type is borne in pendent catkins, the female elongating to 6-8 cm long. Fruits are ovoid,

pointed capsules 6-8 mm long, splitting to release the seeds; seeds 2-3 mm long, each with a tuft of long, white, silky hairs ("cotton"), easily blown by the wind. The common name is in reference to the slender leaves.

Variation within the species: No variants have been recognized within the species, but natural hybrids are frequent between narrow-leaf cottonwood and other species:

balsam poplar (*P. balsamifera*) = *P. x brayshawii* Boivin (Brayshaw's poplar);

eastern cottonwood (*P. deltoides*) = *P. x acuminata* Rydb. (lanceleaf poplar);

Fremont cottonwood (*P. fremontii*) = *P. x hinckleyana* Correll.

Distribution

Narrow-leaf cottonwood occurs primarily in mountainous areas from southern Alberta and Saskatchewan south to Oregon and California (east of the Sierra Nevada), Arizona, New Mexico, and Trans-Pecos Texas and in northern Mexico (northeastern Sonora). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

Narrow-leaf cottonwood grows along streambanks in dry mountains, desert shrublands, and prairie grasslands and in coniferous forests with willows and alders, at elevations of 900-2450 meters. It is commonly found on narrow, periodically flooded benches adjacent to streams and smaller rivers. Common associates are Douglas-fir, blue spruce, ponderosa pine, Rocky Mountain juniper, maples, birches, alders, other cottonwoods and aspen; in relatively undisturbed sites, the understory often includes red-osier dogwood, chokecherry, serviceberry, willows, and currants.

Narrow-leaf cottonwood is a pioneer that colonizes sandbars and other fresh alluvium in areas of full sun. Such sites tend to become dominated by a dense, closed canopy of cottonwood. Continual disturbances such as flood and fire allow such communities to persist.

This species flowers in May, before or during leaf emergence and fruits May-July, with seed dispersal in June-July.

Establishment

Flowering begins at about 15 years in narrow-leaf cottonwood. Male and female trees must be grown in proximity if seed is desired. Large seed crops are produced each year but seeds are viable for probably no more than 3 weeks. They establish only if they land on unoccupied, wet, sandy soil in full sun. Flood disturbance along waterways enhances seedling recruitment, and periodic fires may serve the same purpose – removing competing conifers, allowing more light penetration, and exposing mineral soil. Narrow-leaf cottonwood is a fast-grower but short-lived species in natural conditions.

Narrow-leaf cottonwood reproduces vegetatively by sprouting from roots and stumps.

Management

Because of its short period of viability, seed needs to be sown within a few days of ripening in the spring. Otherwise they may be kept viable by drying and storing cold in an airtight container. In a cold frame, sow on the surface or lightly cover the seeds. Plant into permanent positions either in late summer or the following spring, depending on growth of the young plants.

Cuttings of twigs 20–45 cm long and 1-3 cm diameter of the current season's growth, taken during the dormant season, can be placed in a sheltered outdoor bed or directly into permanent positions. Initial growth of un-rooted cuttings may not be as rapid as that of rooted cuttings. Cuttings grown in a mist-propagator also root easily and survive potting. Nursery- or container-grown seedlings and rooted cuttings establish easily and grow rapidly on moist well-drained soils in full sun. Growth may be minimal on wet soils and upland sites.

Beaver activities may inhibit cottonwood regeneration; seedlings and saplings are stripped of bark for food and larger trees are cut for building material. Poorly oxygenated water in stagnant ponds causes a decline in health. Severe grazing by livestock, and associated trampling of seedlings, reduces cottonwood regeneration potential.

The aggressive root systems can invade and damage drainage systems and also may heavily draw available moisture from gardens and building foundations, especially in clay soil. Root suckers also may be considered a maintenance problem, and the profuse production of cottony seed from female plants can be a minor nuisance.

Narrow-leaf cottonwood will produce stump sprouts and root suckers after light to moderate intensity fires. Seedlings, saplings, and young trees are damaged or killed by fire, but they develop more fire-resistant bark after 15-20 years of age. Older trees may be killed by even relatively cool fires, which wound trees and open the way to heartwood decay. Where spruce is climax, periodic fire may contribute to the maintenance of cottonwood stands, but mature bottomland hardwood stands will not persist in the face of fire.

Cultivars, Improved and Selected Materials (and area of origin)

Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government." The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

References

Eckenwalder, J.E. 1977. *North American cottonwoods Populus (Salicaceae) of sections Abasco and Aigeros*. J. Arnold Arb. 58:193-207.

Eckenwalder, J.E. 1989. *Natural intersectional hybridization between North American species of Populus (Salicaceae) in sections Aigeros and Tacamahaca. II. Taxonomy*. Canad. J. Bot. 62:325-335.

Harris, H.T. 1989. *Populus angustifolia*. IN: W.C. Fischer (compiler). *The fire effects information system* [Data base]. USDA, Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory, Missoula, Montana. SEP00.

Lanner, R.M. 1983. *Trees of the Great Basin: A natural history*. Univ. of Nevada Press, Reno, Nevada.

Prepared By

Guy Nesom

Formerly BONAP, North Carolina Botanical Garden, University of North Carolina, Chapel Hill, North Carolina

Species Coordinator

James Henson

USDA, NRCS, National Plant Data Center, Baton Rouge, Louisiana

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

Read about [Civil Rights at the Natural Resources Conservation Service](#).