A Walk In The Woods

A Guide for the Identification of Plants Commonly Encountered Along the Cross Timbers Nature Trail

WOODY PLANTS

The Tulsa Botanic Garden

By Ronald J. Tyrl and Jay B. Walker and Eli Hayes
Illustrations by Bellamy Parks Jansen

How to Use This Guide

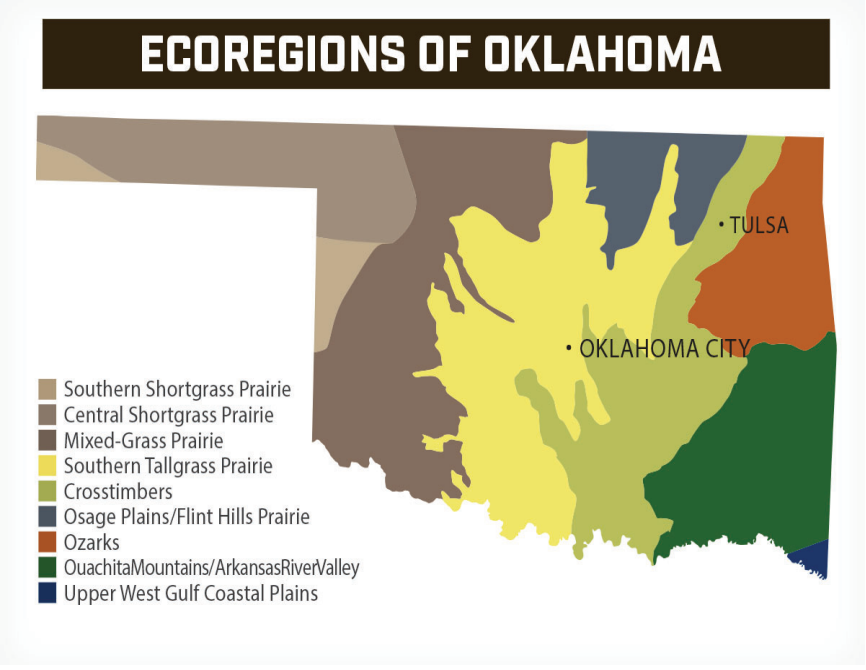
The Tulsa Botanic Garden site has a great diversity of plants encompassing a variety of habitats. This guide will introduce you to some of them, primarily the forest and grassland species characteristic of The Cross Timbers, which is described on the next pages. It also will introduce you to species that are indicative of certain ecological conditions such as thin soils, watercourses, or disturbance.

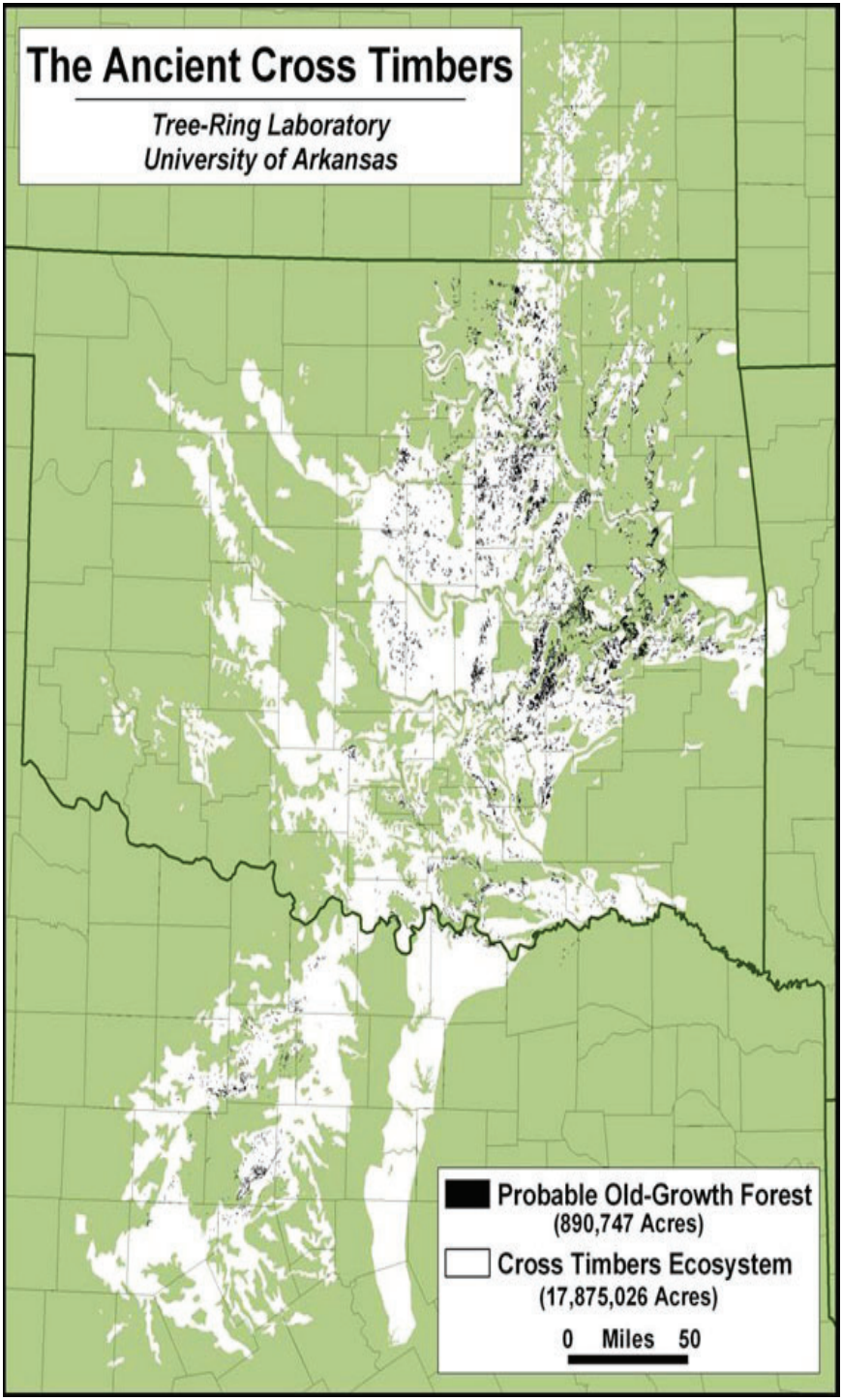
As you follow the approximately one mile trail, stop periodically and look at the common plants around you. Identify them by comparing their features to the illustrations and descriptions off ered in the following pages.

In addition to presenting the features that are used in recognizing individual species, each synopsis provides information about the ecology, and economic, wildlife, and/or ethnobotanical significance of the species. Unfortunately, space limitations prevent us from listing and illustrating all of the species you are likely to encounter. We selected the most common species that are found along the trail and those that give the vegetation its characteristic appearance. Enjoy your walk!

Oklahoma – A Botanical Crossroads

Biologically, Oklahoma is a remarkable state! The state lies at the intersections of some of the most significant ecosystems of America. The tall grass prairies of the north battle with the short grass prairies of the west, the mesquite grasslands of the south, and the forests of the east. The state includes pinyon pines in the foothills of the Rocky Mountains and stately cypress in the swamps of the southeast. A distinct gradient of rainfall is evident across the state, with only 15" falling annually in the northwest, to 60" in the southeast. This diversity of ecosystems leads to a remarkable assemblage of plants, including 173 families, 868 genera, and 2540 species. From Alligators to Antelope, from mesquite to magnolias, Oklahoma has it all.




The Ancient Cross Timbers
Tree-Ring Laboratory
University of Arkansas
Probable Old-Growth Forest
(890,747 Acres)
Cross Timbers Ecosystem
(17,875,026 Acres)
0 Miles 50

The Cross Timbers

Nowhere is this conflict between the prairie and forest more evident than in the Cross Timbers. The Tulsa Botanic Garden lies in the midst of this remarkable ecosystem, located at the intersection of Eastern and Western America. The stately Eastern forests do battle with the western prairies, forming a mosaic of upland forests and tallgrass prairies that extends from southeastern Kansas across Oklahoma to north-central Texas. Although the forests here contain many of the same species as those farther east, here the trees are stunted and gnarled. This forest is so dense, it is said that wagon trains traveled to the north or south of the region, considering the Cross Timbers impassable. In 1832, Washington Irving compared traveling through the ecosystem to "struggling through forests of cast iron." However, this quality of the Cross Timbers has left Oklahoma with one of its greatest treasures. The forest being too stunted to have been logged, and the soil too shallow to be farmed has left the ecosystem essentially intact. High quality sections of Cross Timbers, such as that which exists here at the Botanical Garden, appear much the same and contain the same animals and plants as they did prior to the arrival of Europeans.

WOODY PLANTS

Blackberry ***Rubus spp.***

Shrubs, forming thickets or brambles; stems arching, 1-2 m long, bearing stout prickles; leaves alternate, 1-pinnately compound; leaflets 3 or 5; flowers in clusters of 3-5; petals 5, free, white; stamens numerous; fruits round to cylindrical aggregates of black drupes.

Nine native species, but many hybrids. Native Americans used for food and medicinally to treat diarrhea and stomach aches. Important food producer for wildlife. Both cattle and deer browse stems and foliage.

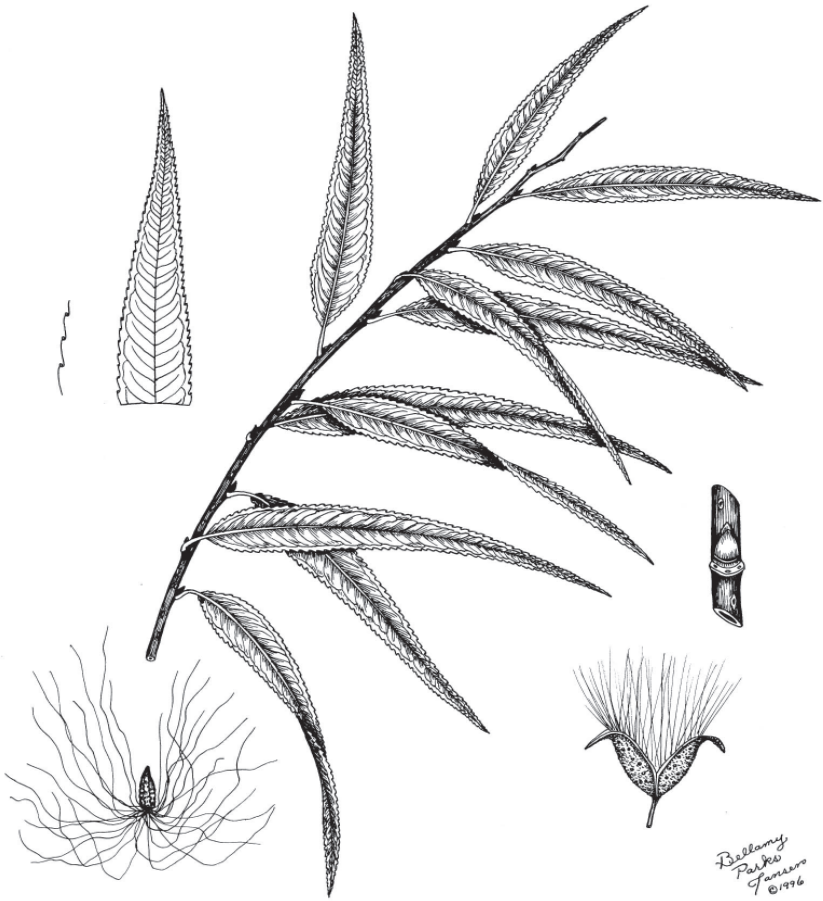
Black Hickory ***Carya texana***

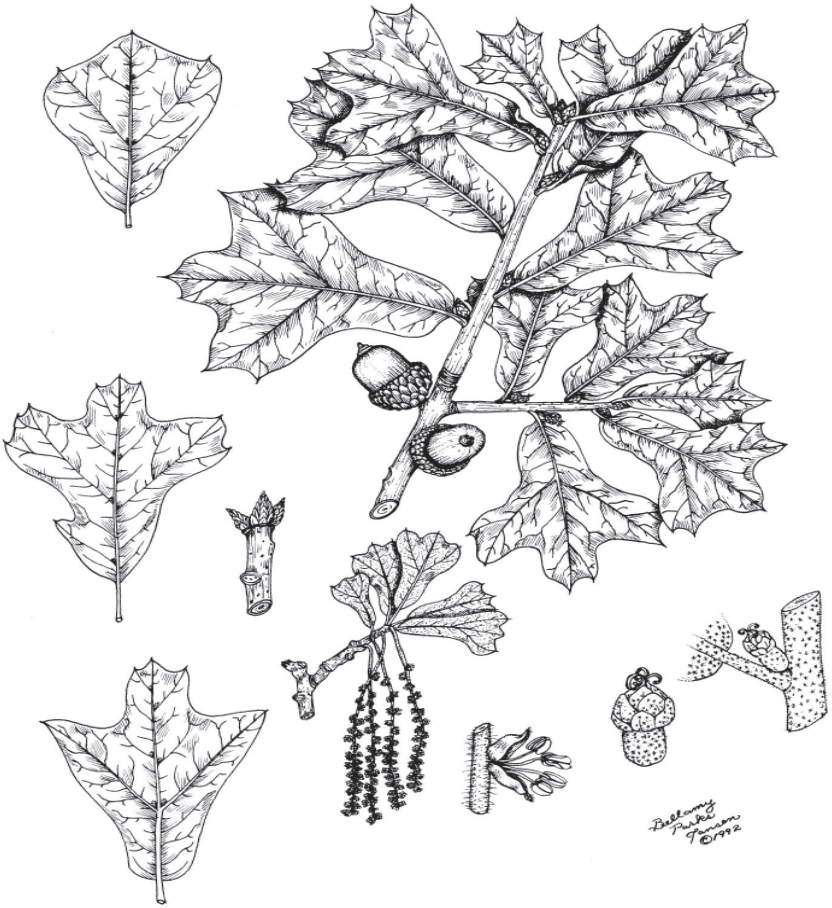
Tree; bark brown; branches stout, with heart-shaped leaf scars; leaves alternate, 1-pinnately compound; leaflets 5 or 7, blades elliptic to obovate, margins toothed; staminate flowers in catkins; fruits round, nuts enclosed in slightly 4-winged husk.

Associated with post and blackjack oaks in Cross Timbers. Characteristic of dry, rocky, uplands. Firewood, not large enough for lumber. Starvation browse for white-tailed deer. Nuts eaten.

Black Willow ***Salix nigra***

Tree; bark brown, deeply furrowed; branches light brown; leaves alternate, blades lanceolate, somewhat curved, toothed; flowers in catkins; seeds tiny, with tuft of hair. Characteristic of sandbars, floodplains, edges of streams, ponds, reservoirs. Seed germination and establishment require wet, barren soils. Inner bark has precursor of salicylic acid (asprin), used for headaches, fevers, and as anti-inflammatory. Wood used for crates, pulp, pallets. Good wildlife species: food, good honey plant.





Blackjack Oak, Blackjack ***Quercus marilandica***

Irregularly shaped tree; drooping dead branches; bark deeply furrowed; leaves alternate, glossy green, leathery, bell-shaped, with 3 lobes tipped with short bristles.

A dominant species of Cross Timbers. Dry rocky soils of ridge tops. Dense wood excellent for firewood and charcoal. Native Americans used bark to treat dysentery. Acorns eaten by birds, small mammals, and white-tailed deer. May cause oak toxicosis in cattle.

Buckbrush, Coralberry ***Symphoricarpos orbiculatus***

Shrub; forming low thickets; stems branched; bark gray-brown, shredding; leaves opposite, sessile or subsessile, blades oval or elliptic to round; flowers in dense clusters in upper leaf axils, white or pink; fruits purple-red, persistent. Occurs in forest understory and at interface with prairie. Native Americans used bark, crushed leaves, fruits to make eyewashes, and teas for fevers and menstrual problems. Provides cover and food for wildlife, especially in winter.

Poison Ivy ***Toxicodendron radicans***

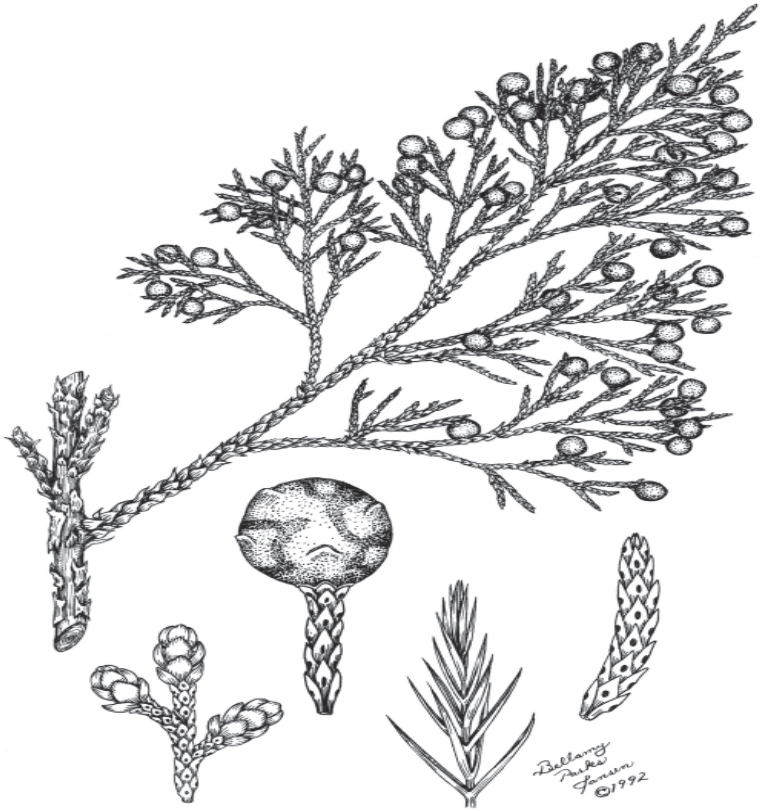
Woody vine or herb or shrub from rhizomes; stems reddish brown; climbing by masses of aerial roots; leaves alternate, 1-pinnately compound; leaflets 3, egg- to lance-shape, margins entire or toothed or lobed; flowers small, greenish white; fruits round, white or cream or whitish tan.

Typical of disturbed sites. Causes contact dermatitis with a characteristic itching, reddening, and blistering of the skin. Native Americans used crushed leaves to cure ringworm. Good wildlife species; fruits eaten by birds; foliage by deer.

Chittamwood, Gum Bumelia ***Bumelia lanuginosa***

Tree; stout thorns; leaves alternate or fascicled, oblanceolate, glossy-green borne in spurs; flowers small, greenish cream, in dense clusters; berries purplish black.

Solitary trees in open woods on rocky, thin soils in uplands or, in West, thicket forming in sandy soils. Native Americans used mucilage of outer bark as chewing gum. Berries edible. Occasionally planted as ornamental. Good wildlife and bee species.



Eastern Redcedar ***Juniperus virginiana***

Aromatic evergreen tree, pyramidal growth form; leaves scale-like; seed cones (“berries”) blue; pollen cones small, yellow-green. dioecious.

Fire suppression allows invasion of this tree into prairies, old fields, pastures. Native Americans used in purification rituals and to cure mouth sores, head colds, coughs, kidney problems, nervous problems, and other ailments. Settlers used fence posts, roof rafters, and windowsills. Aromatic wood repels insects; used for closets and chests. Good wildlife species.

Fragrant Sumac, Skunkbush ***Rhus aromatica***

Thicket-forming shrub; fragrant or malodorous when crushed; branches dark reddish brown; leaves alternate, palmately compound, leaflets 3; flowers appear before leaves, yellow; fruits clustered, bright red, glandular-hairy. May be mistaken for poison ivy, but strong odor diagnostic.

Native Americans used all parts medicinally; fruits, high in Vitamin A, used for food and lemonade-like drink; branches woven in baskets. Good wildlife species; twigs, leaves, fruits eaten; provides cover for birds and small mammals.

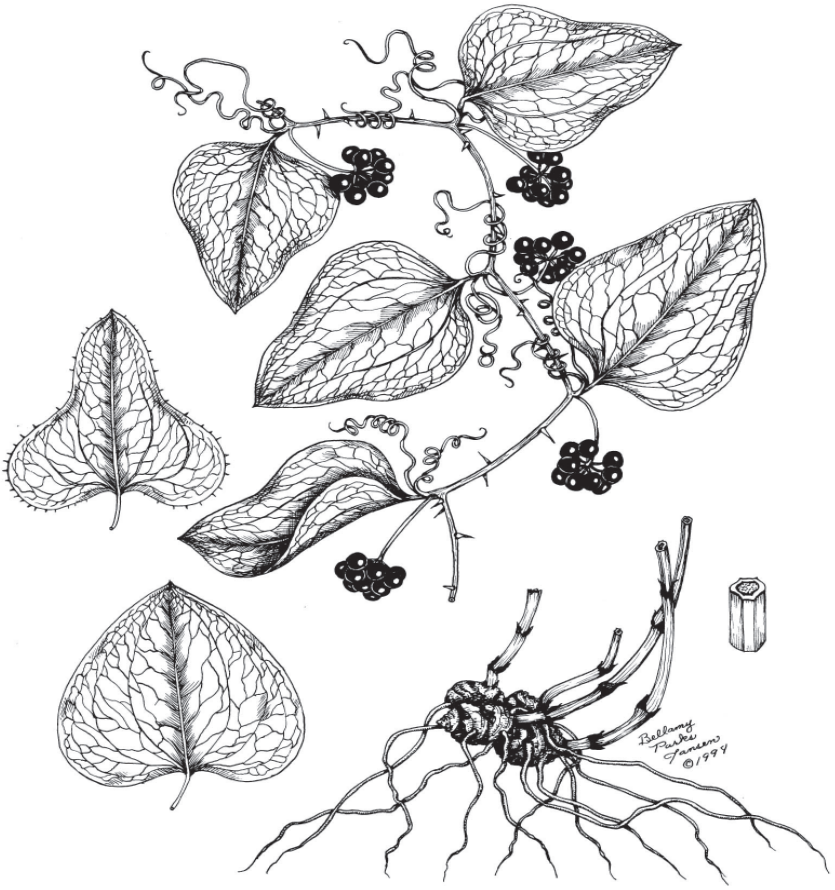
Green Ash ***Fraxinus pennsylvanica***

Tree; bark furrowed in Ys; leaf scars broad U's with axillary bud above; leaves opposite, 1-pinnately compound; leaflets 7 or rarely 5 or 9; staminate flowers in dense clusters; fruits oblanceolate samaras; dioecious.

Floodplains and moist soils of slopes. Sacred tree for many Native American tribes; bows, arrowshafts, toys. Now used as ornamental, in wind breaks, and for sporting equipment, cabinetry, veneer, firewood. Wildlife eat fruits and foliage.

Greenbrier, Catbrier ***Smilax bona-nox***

Woody vine with tendrils and stout prickles; stems green, angular, climbing; leaves alternate, leathery, heart- to egg-shaped; flowers small, yellowish green; berries shiny black. Often forming dense tangles or thickets in disturbed sites or forest edges. Difficult to manage unless burned frequently. Settlers broke plows and harnesses on rootstalks. Young stem tips eaten like asparagus; powdered rootstocks used in making jelly, thickening soup, or mixed with water to make a refreshing drink. Excellent wildlife species.



Hawthorn ***Crataegus spp.***

Small solitary trees or in thickets; thorns present or absent; leaves alternate, of various shapes, margins toothed and/or lobed; flowers clustered on side branches; petals 5, white; stamens 20; fruits round, red to blue-black pomes.

Persimmon ***Diospyros virginiana***

Tree; bark dark, with square plates; leaves dark green, glossy, somewhat folded, droop in two rows; berries yellow-orange, persisting after leaves drop; dioecious. Solitary or forming dense thickets of spindly trees. Weedy; infests overgrazed pastures, old fields, and abandoned croplands. Native Americans and settlers used for food and medicine. Pulp mashed, dried, and used as additive. Leaves used for teas. Golfclub heads. Important wildlife species.

Plum ***Prunus spp.***

Small solitary trees or thicket-forming shrubs; leaves alternate, egg- to lance-shaped or oblong, margins toothed, petioles with 1 or 2 large glands; flowers showy, solitary or clustered; petals 5, free, white; stamens numerous; fruits large, red or yellow red to purple-black.

Ten native species. Both forests and prairies; in variety of soils. Native Americans and settlers seeped roots to make vermifuges, washes for abrasions, mouthwashes for sores, cough medicines. Fruit's edible. Provides wildlife cover.

Post Oak ***Quercus stellata***

Tree; bark light gray, flaking; leaves alternate, glossy green, leathery, cross-shaped, with rounded lobes, and dense covering of stellate hairs on lower surface.

A dominant of Cross Timbers. Across state with exception of northwest corner and Panhandle. Dry, sterile, upland soils or sands in West. Dense wood good for firewood and charcoal. Important acorn producer for birds. small mammals, and white-tailed deer. May cause oak toxicosis in cattle.

Redbud ***Cercis canadensis***

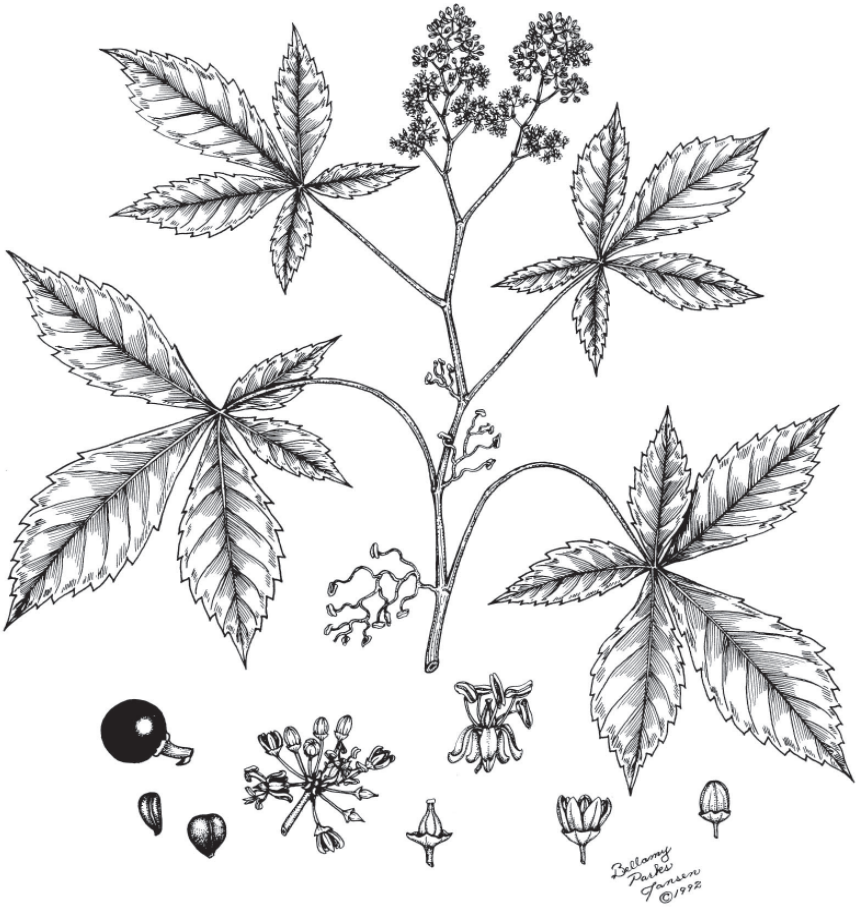
Tree; bark dark; leaves alternate, heart- or kidney-shaped; flowers pink or white, clustered, butterfly-like; fruits flat, elliptic, light brown.

Understory species of moist open woods. One of earliest spring flowering species; fast-growing; short-lived. State tree; widely cultivated. Flowers may be fried or used as salad garnish; legumes sautéed in butter. Good humus builder. Moderate wildlife use; considered emergency food for limited number of species.

Sugarberry, Southern Hackberry ***Celtis laevigata***

Tree; bark light gray, warty; leaves alternate, lanceolate, thin, with long acuminate tips, 3 nerves, and oblique bases; fruits solitary in leaf axils.

Moist soils of floodplains and lower slopes, but drought resistant in upland sites. Native Americans and settlers ate sweet fruits raw, dried, or mixed with fat, meat, or bread. Planted for shade; wood used for furniture framing, crates, and athletic goods. Excellent for wildlife.



Virginia Creeper ***Parthenocissus quinquefolia***

Woody vine; stems high-climbing, reddish brown; tendrils branched with terminal pads; leaves alternate, palmately compound, leaflets typically 5 (3-7) with toothed margins; flowers small, green; berries black or blue-black.

Forms large masses in tree crowns. Prized for bright red or scarlet foliage in autumn. Sometimes mistaken for poison ivy. Excellent species for wildlife; berries, leaves, and stems eaten. Causes digestive tract problems in humans.

Winged Elm, Cork Elm, Wahoo ***Ulmus alata***

Fast-growing tree; branches slender, gray, with 2 flat, corky wings; leaves alternate, 2-ranked, blades elliptic to egg-shaped, margins doubly toothed, bases asymmetrical; fruits flat, egg-shaped, brown samaras.

In both upland and bottomland communities. Native Americans and settlers seeped inner bark to make teas to control diarrhea and ease childbirth. Fibers of inner bark woven into baskets and rope. Important wildlife species; twigs and foliage browsed; buds and fruits eaten.

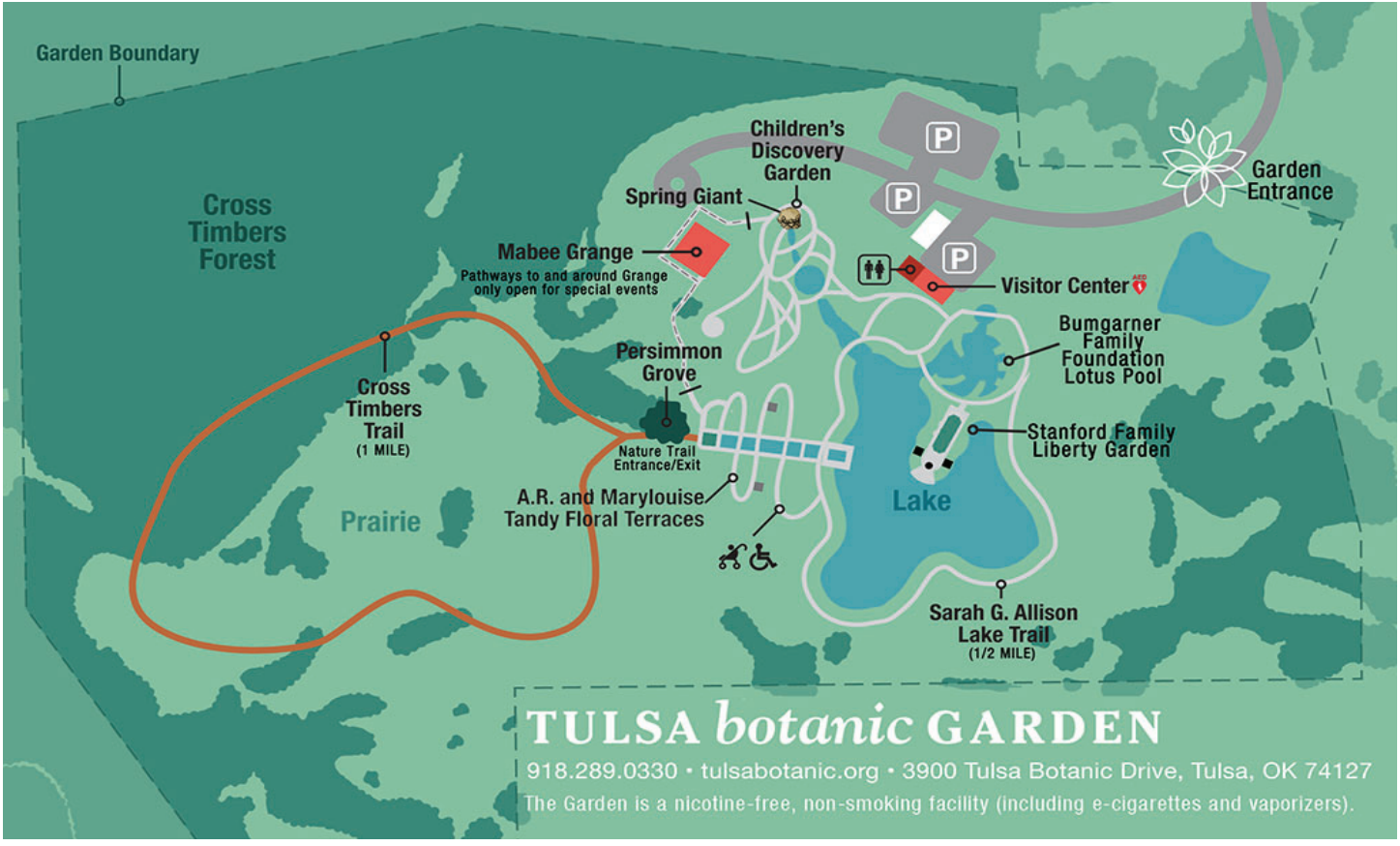
Winged Sumac, Shining Sumac ***Rhus copallinum***

Thicket-forming shrub; sap milky; branches stout, reddish-brown, with fine brown hairs; leaves alternate, 1-pinnately compound; leaflets 9-21, green above and below, margins not toothed-green below, margins not toothed,rachises winged; flowers clustered; fruits bright-red, glandular-hairy.

Typically in open sites and interface between forest and prairie. Native Americans used all parts medicinally; fruits used for food and lemonade-like drink. Good wildlife species; provides cover and food.

Tulsa Botanic Garden

The Tulsa Botanic Garden is remarkable in that it has been created on virgin land -- a site found after an exhaustive search of the greater Tulsa area for an ideal place for a botanical garden. It is an untouched landscape of contrasts of wide-open spaces framed by patches of woodland, of rolling hills, bright wildflowers, swaying grasses and gnarled oaks, some more than 100 years old. The Botanical Garden hosts botanical research, youth and adult education programs, special events, and stunning gardens. It will become one of Oklahoma's most diverse botanical gardens, with 15 major gardens encompassing at least 60 smaller gardens and dozens of special features and structures. The majority of the 170-acre site will be preserved for its historical and ecological significance. Natural areas are providing visitors the opportunity to explore native prairie and Cross Timbers forests in its natural state. Trails such as you will explore with this guide will help interpret the plants, animals, and history of this enchanted area. All of this exists only seven miles from downtown Tulsa, so enjoy an Oklahoma botanical treasure!


Garden Boundary
Cross Timbers Forest
Children's Discovery Garden
Spring Giant
Mabee Grange
Pathways to and around Grange only open for special events
Garden Entrance
Visitor Center
Bumgarner Family Foundation Lotus Pool
Persimmon Grove
Cross Timbers Trail
(1 MILE)
Nature Trail Entrance/Exit
Stanford Family Liberty Garden
A.R. and Marylouise Tandy Floral Terraces
Prairie
Lake
Sarah G. Allison Lake Trail
(1/2 MILE)
TULSA botanic GARDEN
918.289.0330 • tulsabotanic.org • 3900 Tulsa Botanic Drive, Tulsa, OK 74127
The Garden is a nicotine-free, non-smoking facility (including e-cigarettes and vaporizers).

TULSA botanic GARDEN

Tulsa Botanic Garden
3900 Tulsa Botanic Drive
Tulsa Oklahoma 74127
tulsabotanic.org
918-289-0330