

# Camp Strake Nature Trail Guide

10-28-2021 Revision

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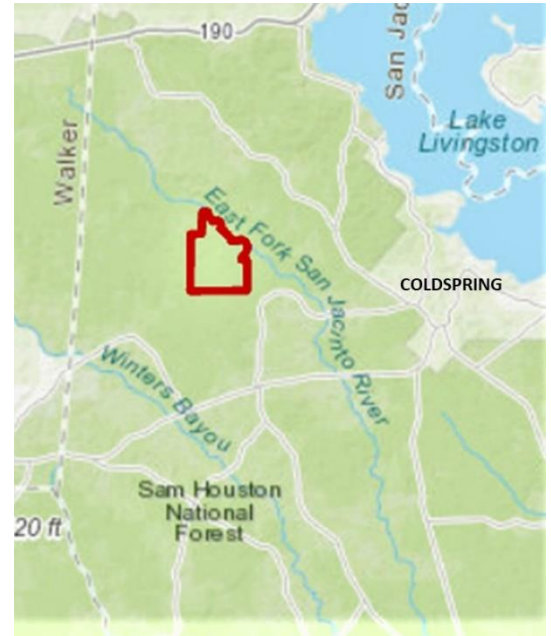
**Susan Buckley**

Camp Strake is located within the Sam Houston National Forest in the East Texas Pineywoods Ecoregion. This is part of a much larger region dominated by pines, hickories and oaks (including the nearby Big Thicket habitat) that extends into Louisiana, Arkansas and Oklahoma. Little of the Longleaf pine that once dominated the region remains due to extensive timbering and replacement by faster growing plantations of Loblolly and Shortleaf pine. This, together with suppression of fires, has changed the ecology of the region as well as increasing the risk of extreme fires due to the buildup of thick understory.

Because most of the camp was once a tree farm, much of the original diversity was destroyed. Exceptions were the wetlands to the north and buffers along stream channels. For that reason, the nature trail was focused along the protected riparian buffer zones near the main camp for diversity and easy access. This trail guide gives brief descriptions of some of the numerous varieties of trees and other plants that are found along that trail.

Forested areas add significant value to the lives of humans. Two applications were used to estimate the value of selected mature trees along the trail: The Texas Forest Service Tree Trails application and the NRCS et.all. i-Tree application. Texas A&M Forest Service has studied and estimated the value of Texas' forests and of individual trees. The Texas A&M Forest Service website, <http://texasforestinfo.tamu.edu/treetrails/#>, allowed calculation of the annual value of services provided by selected trees in the following categories:

- Storm Water Interception
- Air Quality
- Carbon Dioxide (Conversion)
- Energy Savings
- Property Value



When available the value of services provided are based on the Texas Forest Service (TFS) methodology (The i-Tree application used different methodology and is not directly comparable to the TFS application and was only used to estimate total carbon sequestered in selected mature trees). The pie diagrams give the total and relative values in U.S. dollars for services provided annually by the mature size of specific trees identified on the trail. Because we are valuing the services provided on undeveloped portions of the camp, energy savings and property values are generally not included in ecological services provided. by the preserve (although proximity to green space does have some effect on property value). If the tree is not yet full size it's current value will be less than that at maturity. There will also be differences between species either because of different mature sizes or different biology.

In addition to the value of ecological function most trees have at least some commercial value for lumber. The commercial value is generally significantly lower than the ecological value.

Texas A&M Forest Service also estimates the value of forest ecosystems throughout the state. These values can be viewed at <http://texasforestinfo.tamu.edu/map/fv>. The assessed value of ecosystem services for all East Texas counties totals \$26.1 billion or \$2,177 per acre.

Statewide, Texas has over 62 million acres of forested land and forested ecosystems valued at \$92.9 billion annually. This value was summarized in October 2013 by the Texas A&M Forest Service in the following categories:

- Watershed regulating = \$13.2 billion/year
- Climate regulating = \$4.2 billion/year
- Biodiversity services = \$14.8 billion/year
- Cultural services = \$60.4 billion/year
- Air quality services = \$190.3 million/year

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**Information, maps and sketches were derived from a number of additional resources including the following:**

NRCS online plant database at <https://plants.usda.gov/>

Guide to Southern Trees, E. Harrar and J.G.Harrar, Dover, 1962

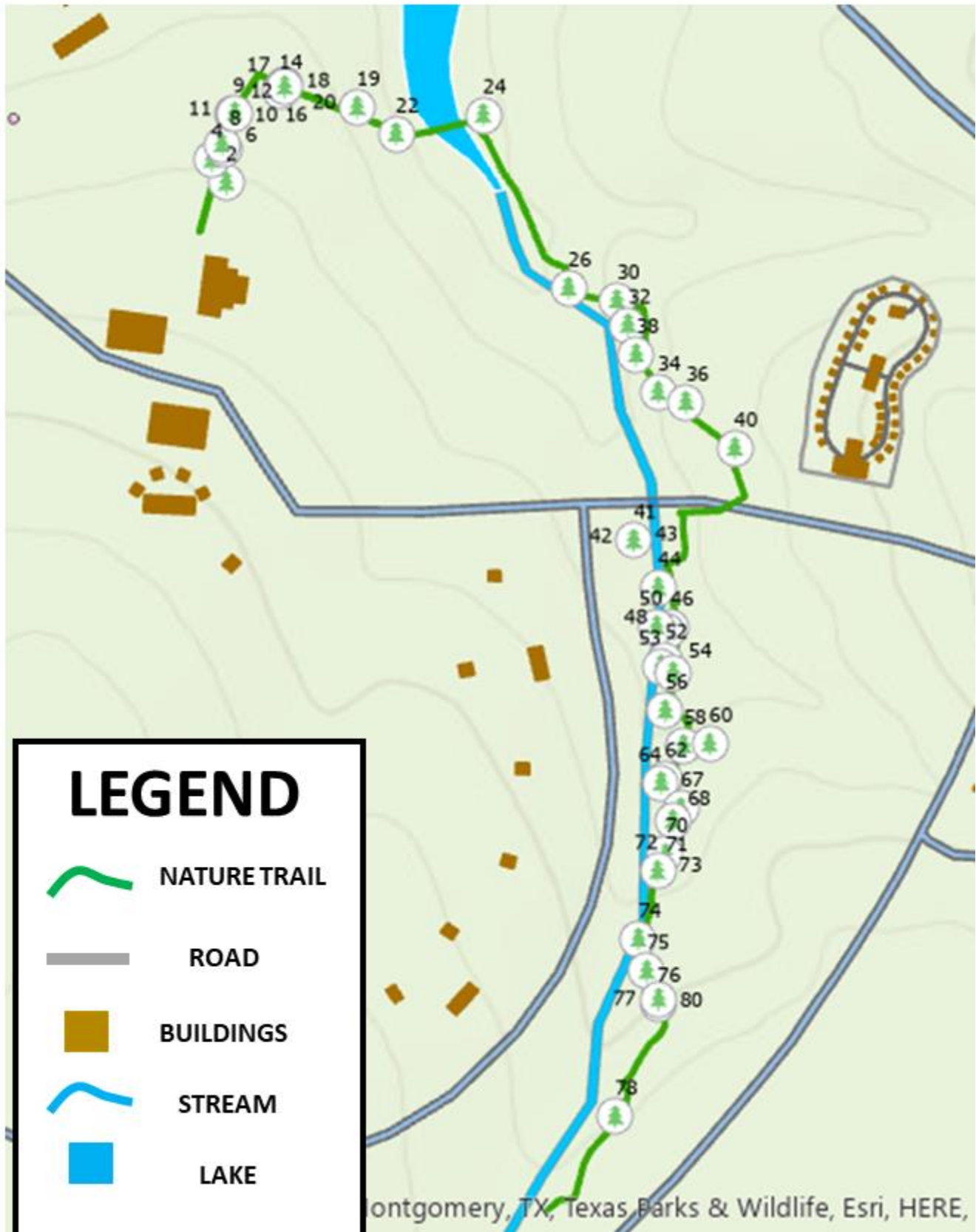
Forest Trees of Texas and How to Know Them, Bulletin 20, Texas Forest Service

Texas Trees: A Friendly Guide, P. Cox and P. Leslie, Corona Publishing, 1993

Audubon Society Field Guide to North American Trees: Eastern Region, E. Little, Knopf, 1986.

Trees, Shrubs and Woody Vines of the Southwest, R.A. Vines, Texas Press, 1986

# LOCATION OF IDENTIFIED TREES/PLANTS



# CAMP STRAKE NATURE TRAIL

The following trees are marked by numbered metal tags inside a yellow circle or hanging from the plant. The associated number are listed below. The locations are indicated on the above map. Numbering has left space for additional trees or features to be added as they are identified. The descriptions for these trees/plants follow below the table.

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50 American holly with Blackhaw viburnum, Magnolia and Red Maple across creek	
52 White oak	
53 River birch	

## Stations 2, 10, 12: Winged Elm

Scientific Name: *Ulmus alata*

Mature Height: 40-50 ft

Mature Trunk Dia: 24 in

Bark: Light brownish gray, divided into flat, often superficially scaly ridges by narrow, shallow fissures.

Twigs: Slender, those of current season grayish brown to reddish brown; commonly with two corky wings or ridges giving it its name.

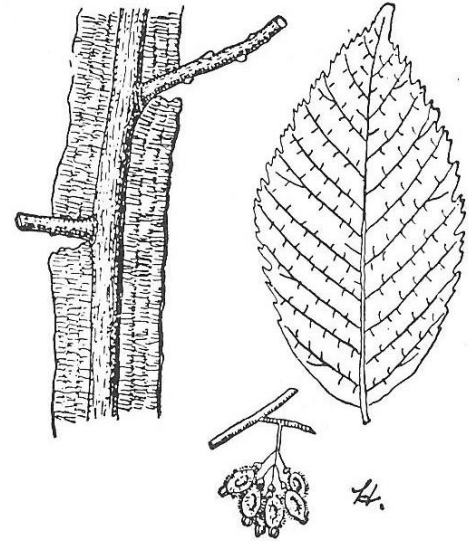
Leaves: Alternate, simple, deciduous, 1 ½ - 3 ½ " long, 1- 1 ½ " wide, oblong-lanceolate to oblong-ovate; base, unequally rounded; margin coarsely doubly serrate, dark green and smooth above, pale-pubescent below; petioles, short stout about 1/3" long.

Flowers: Perfect without petals, long stalked born in clusters of 3-5 appearing from separate buds before leaf emergence in spring; calyx bell-shaped yellowish-red, 5 lobed; stamens 5, with long slender filaments and orange-red anthers; pistil pale green, wooly, compressed.

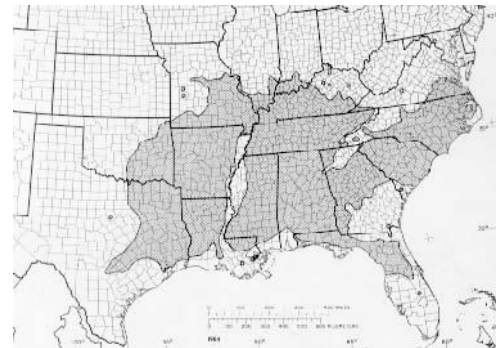
Ecological Value: \$260.56 Value of total CO2 stored at maturity (i-Tree)

Description: Winged elm gets its common name from the thin corky growth or wings usually found on smaller branches. These wings generally end abruptly at the leaf nodes as contrasted with the cedar elm whose wings are generally continuous. On large rapidly growing trees the wings are often absent. It occurs in eastern Texas south to the valley of the Guadalupe River, on dry uplands, and in moist soils along streams and swamps. It grows rapidly in moist situations.

It is not a timber tree of primary importance, but because of its rapid growth, pleasing habit and freedom from serious pests, it is a favorite ornamental tree. The inner bark is fibrous and has been used locally for baling twine. Because of its resistance to splitting it has been used for hocky sticks.



WINGED ELM  
(Leaf and fruit, one-third natural size  
Twig, one-half natural size)



## Station 4: Common Persimmon

Scientific Name: *Diospyros virginiana*

Mature Height: 20-70' feet

Mature trunk diameter: 12-24"

Bark: brown or blackish, deeply furrowed into small square scaly plates on mature trees. Resembles alligator skin.

Leaves: Simple, alternate smooth margin, deciduous, oblong, 4-6" long and 2-3" wide. Leathery with a dark green color above and paler below.

Flowers: In the spring to early summer. Dioecious (male and female flowers on separate plants)

Ecological Value (annual) \$94

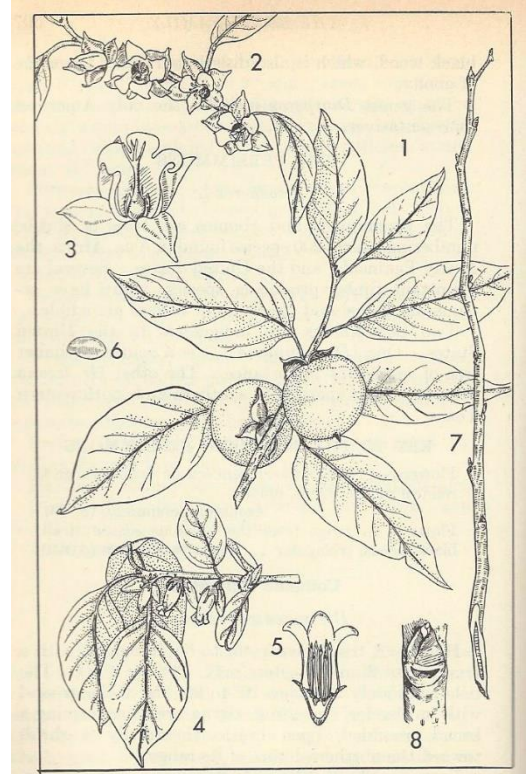
Description: In the open it forms a dense cylindrical crown. Sometimes occurs as a shrub. Adapted to a range of habitats from bottomlands to dry uplands and along fence rows. Can form dense thickets through root sprouts. In the preserve tends to occur in isolation or in small groups.

Uses: Known to the Indians and early settlers for its sweet fruit when ripe. Green or un-ripened fruit is more astringent than full strength alum. Some wait until after the first frost before harvesting.

Persimmon wood is noted for its toughness, strength, hardness and ability to absorb shock. Its primary uses were for textile weaving shuttles, billiard cues, spools, bobbins and golf club heads.

Many species of wildlife feed on the fruit.

The habit of suckering from the roots on poorer soils make it useful for erosion control.



## Station 6: Yaupon Holly

Scientific Name: *Ilex vomitoria*

Mature Height: Up to 25-30 feet

Mature trunk diameter: 12-15"

Bark: The bark is smooth, light grey with lighter grey to nearly white splotches.

Leaves: alternate and oval in shape. They are dark green with a leathery appearance and a lighter colored underside. The leaf margins have a slight serration

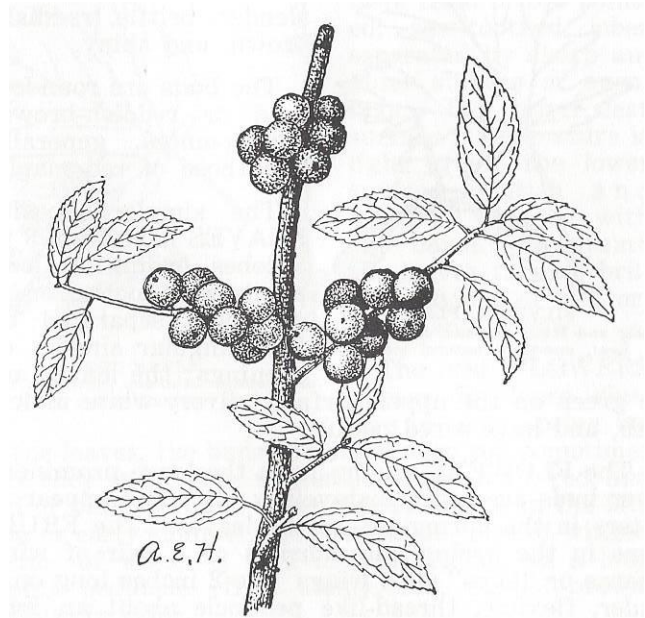
Flowers: Yaupon is dioecious with male and female flowers on different plants.

Value (annual) \$56

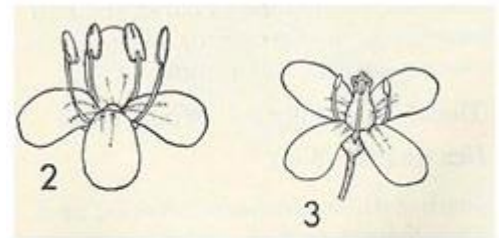
Description: Yaupon is a native perennial evergreen shrub capable of reaching approximately 30 feet in height under ideal conditions. The slight serration of the leaves and alternate arrangement easily distinguish this species from the similar looking invasive nonnative Chinese privet, *Ligustrum sinense* Lour (smooth edge and opposite leaves). Chinese privet has come to occupy a similar niche in the environment after it was introduced through the horticulture and landscape industry in the late 1800s.

Yaupon holly produces small white flowers in the spring followed by red berries on female plants that remain through fall. Birds dine on the berries, but they can induce vomiting in humans.

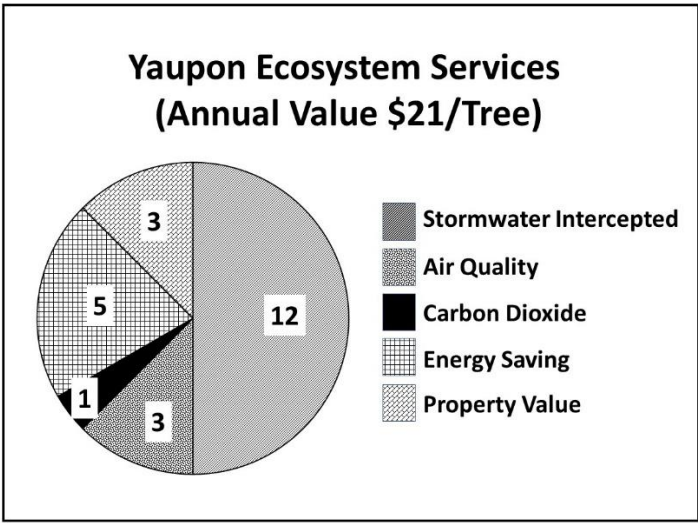
Uses: The Indians used the shoots for arrows. When dried the leaves and bark can be used to make a caffeinated tea. Yaupon makes an excellent hedge plant. It is an evergreen, and when trimmed correctly, produces a thick screen of vegetative material. Individual specimens can be readily trimmed into ornamental designs and shapes. Yaupon is adapted to a wide array of soils and climate conditions. It is disease free, moderately fast growing, and tolerates drought extremely well once established.



Leaf Pattern of Yaupon



2. Male 3. Female





## Stations 8, 16 & 42: Sweetgum

Scientific name: *Liquidambar styraciflua L.*

Mature Height: 100 feet

Mature Trunk diameter: 3 feet

Bark: gray and has deep furrows (little ditches)

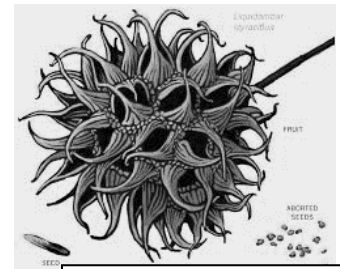
Leaves: star-shaped with five pointy lobes, and a long stalk

Value (annual): \$199



Leaf pattern of Sweet Gum

Description: Young sweetgums are pioneer plants, growing quickly and taking over a field. It is one of the most common hardwoods in the southeastern United States. Fully grown leaves are about six inches long, and bright green. In the fall, leaves turn red. Sweetgums are aromatic, meaning they have a pleasant smell. You can crush a leaf to get a good sense of this. The Fruits of the Sweetgum are spiky green balls that turn brown with age. They are a little over an inch wide, and dangle on a long stalk. Each ball has prickly points that open to let seeds out. Two winged seeds come from each hole.



Close up of Sweetgum Ball

Uses:

Erosion Control- Sweetgum is a good choice as a windbreak tree because of its fast growth and tolerance of a wide variety of sites.

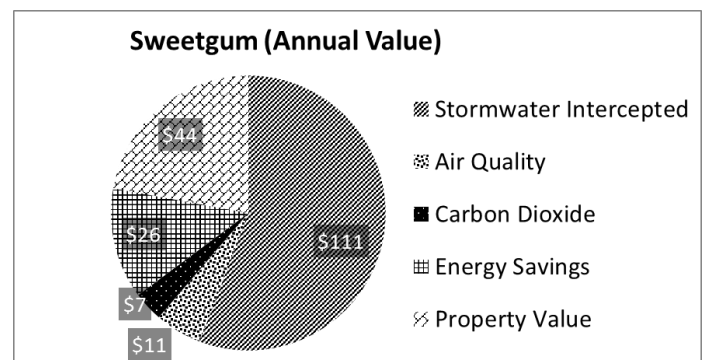
Wildlife- Its seeds are eaten by birds, squirrels, and chipmunks.

Timber- Sweetgum is primarily used for lumber, veneer, plywood, slack cooperage, railroad ties, fuel and pulpwood.

Medicine - Pioneers and Indians used the gum to clean teeth and gums and as salve to treat insect bites and abrasions. The inner bark was used to treat diarrhea and dysentery.

Recreation and Beautification- It is used as a specimen plant, shade tree, and street tree.

Habitat: Occurs in low wet areas of the Piney Woods on acid soils and drier upland soils, but in more limited numbers.



# Stations 9, 37, 74: White Ash

Scientific Name: *Fraxinus americana*

Mature Height: 70-80 feet

Mature trunk diameter: 18"-24"

Bark: Gray; furrowed into deep shaped ridges.

Leaves: Opposite; pinnately 8" long with 5-9 leaflets 2-5" long.

Flowers: Before leaves in early purplish in small clusters. Male and female flowers are on separate trees.

Ecological Value Same as Green ash (annual) \$148

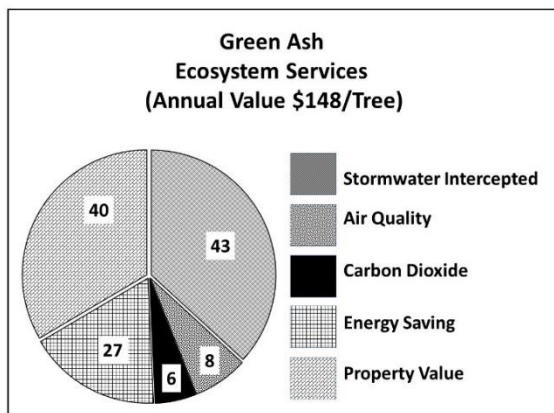
Description: The ashes are the only groups of trees in eastern America with opposite pinnately compound leaves with 5 or more leaflets. Widely distributed in moist well drained valleys and slopes near streams throughout eastern North America. Grows best in rich moist soils of upper bottomlands in association with other hardwoods.

Uses: A very important timber species as a source of wood for cabinet wood, tool handles, baseball bats and long oars). Indians used the straight branchlets for arrows. Planted as an ornamental as it is hardy, attractive and relatively free of disease.



WHITE ASH

diamond  
compound; 6-  
spring; 1/4"



## Stations 11, 80: Post Oak

Scientific name: *Quercus stellata*

Mature Height: 50 feet

Mature Diameter: 18-22"

Bark: Thick, gray, at first blocky or scaly, later deeply irregularly fissured with platelike scales.

Leaves: 3-4" broad; apex rounded; leathery, usually 5 lobed with the 2 central lobes squarish often giving the appearance of a cross. Leaves are high in tannins and toxic to cattle, sheep and goats.

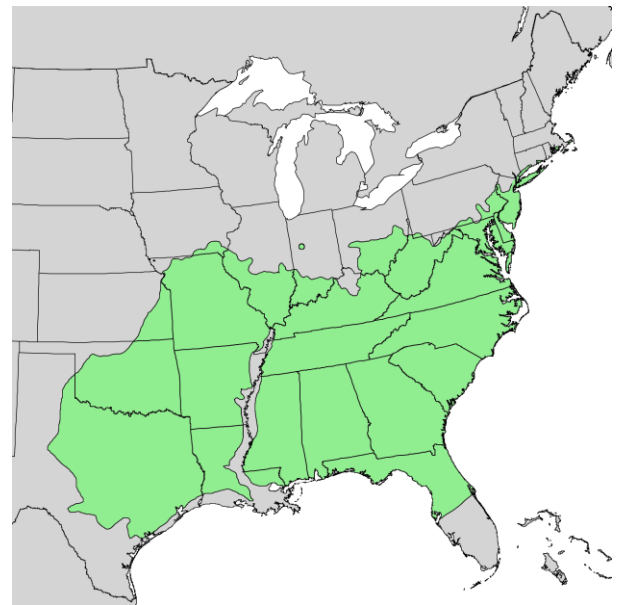
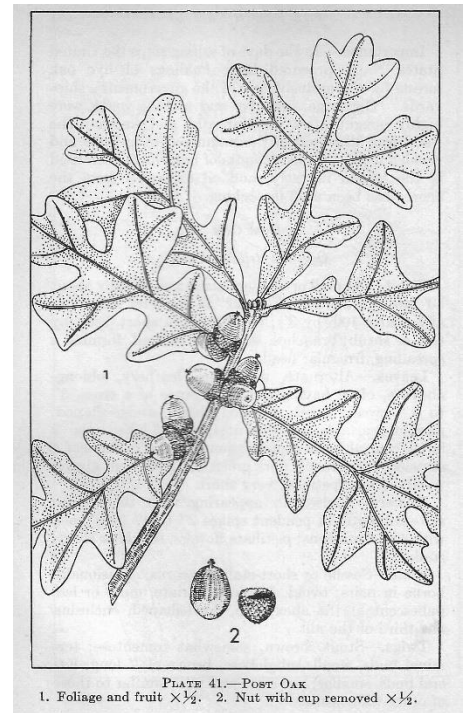
Description: Prefers dry sandy soil or rocky slopes and ridges, less commonly in rich bottomlands.

Importance: A timber species. The wood is heavy, hard and close-grained and durable in contact with the soil. It is used for flooring, crossties and fence posts and occasionally for furniture and lumber.

Also, a valuable contributor to wildlife food. Considered important in the diet of wild turkey, white-tailed deer, squirrels, and many other rodents. When acorns are available animals fatten quickly, go through the winter in good condition, and are most likely to produce healthy young (7). Leaves are used for nest building by birds, squirrels, and raccoons.

Considered a beautiful shade tree for parks and used for soil stabilization on rocky slopes.

**Mast Years:** Oak trees of North America produce more nuts than any other tree region worldwide, cultivated or wild? However, Oak trees do not bear fruit every year and some acorns require up to 18 months to mature. When a forest nut-bearing tree, like an Oak, Pecan, or Walnut, produces a high yield or bumper crop, the year is botanically referred to as a 'mast' year.



Scientists are uncertain as to the exact reason why oaks and other plants mast but there is a range of theories from climate temperatures and rainfall amounts to harsh summers affecting acorn production or the availability of spring winds during pollination. The specific causes remain a mystery, but one undeniable evolutionary benefit of masting is... ensured future offspring. In mast years, acorns fall by the thousands increasing food availability for squirrels, mice, birds, and other forest frugivores. During mast events, dependent wildlife populations increase. The following year, the trees will bear little to no fruit due to the abundance of energy required to produce the previous year's bountiful harvest. In subsequent low to no yield years, wildlife populations decrease as food becomes scarce. Then in a mast year, the overflowing harvest will more than feed the forest critters and ensure some seeds left to grow into future oak trees.

## Station 14, 67: Carolina Basswood

Scientific Name: *Tilia caroliniana*

Mature Height: 30-60 feet

Maximum trunk diameter: 12-24"

Bark: Gray to dark gray-brown, smooth on young trunks, but older main trunks develop interlacing flat-topped ridges separated by coarse furrows

Leaves: Alternate, simple, deciduous and vaguely heart shaped with a lopsided or flattened base.

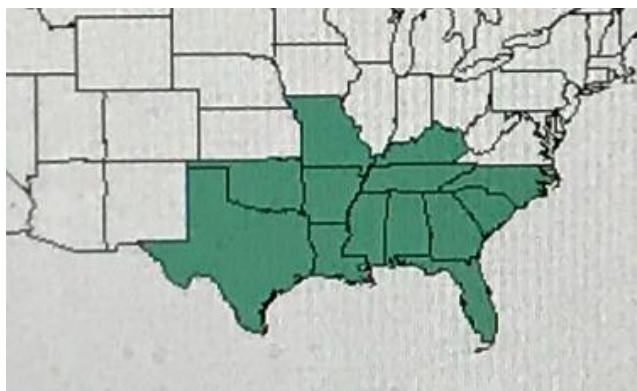
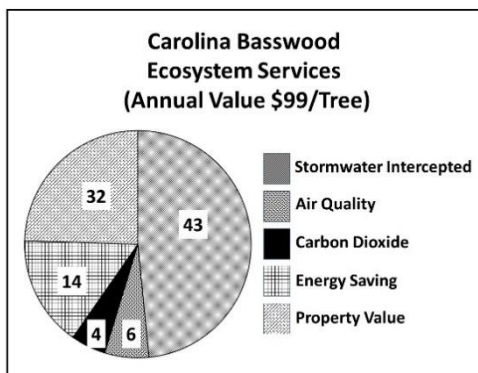
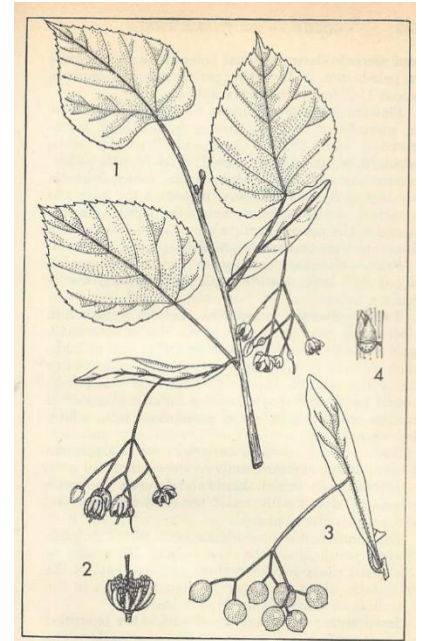
Flowers: Light yellow and ½" across in late spring to early summer

Ecological Value (annual) \$99

Description: Carolina basswood is generally uncommon and often found at low elevations in moist bottomland soils. It is the southernmost Basswood in the family. Often referred to as the bee tree, it is noted for its fragrant, pale yellow flowers that are a source of honey. Wild trees are often multi trunked and generally small to medium sized.

May be distinguished from Red mulberry by fruits, sap (clear in basswood vs milky in mulberry) and often asymmetric leaves in basswood. Mulberry also have three leaf forms vs. one in basswood.

Uses: Limited use in furniture and for carving. Indians and early pioneers made cordage from the bark by soaking and simmering the bark to extract the fibers. The main environmental use is as a source of food source for bees.



## Station 17: Trumpet Vine

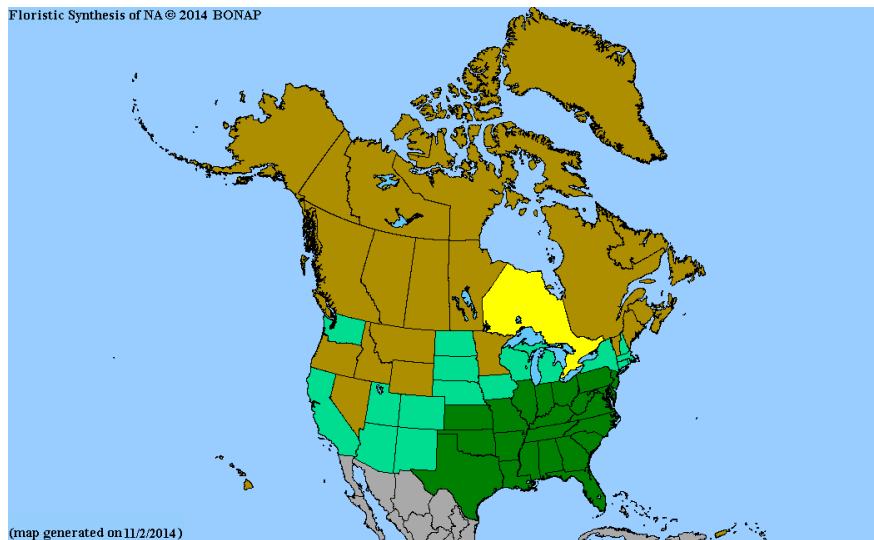
Scientific name: *Campsis radicans*

Leaves: Compound, with 6–10 opposite leaflets (plus one at the tip), ovate-lanceolate, coarsely toothed, with long points. Some people develop a rash when touching this plant, giving it another common name of “cow itch”

Flowers: Flowers are tube-shaped in terminal clusters, 5-lobed, to 3 inches long. Blooms May–August.



Description: Trumpet creeper is a vigorous fast-growing woody vine with red (or rarely, yellow), tubular, 3-inch flowers throughout the summer. It will climb quickly over structures and nearby trees, attaching by aerial rootlets. It grows in moist woods and forests throughout the Southeast U.S., in Texas west to Central and South Texas. Trumpet creeper is fairly drought tolerant, and in good soil with moisture, it can become invasive and overcome smaller plants, spreading by root sprouts or layering. Its flowers are attractive to hummingbirds; it will flower most profusely if it is in full sun and receives regular moisture. In the early spring it can be cut back to promote bushier growth. Young plants may die back to deep fleshy roots in severe winters but it will quickly recover..



Species present in  
state and native



## Station 18, 70: Shumard Red Oak

Scientific name: *Quercus shumardii*

Mature Height: 90-125 feet

Mature Diameter: 4-5 feet

Bark: thick, with whitish scaly ridges separated by deep darker colored fissures.

Leaves: Deciduous, alternate, simple, obovate, 6-8" long, 4-5" wide, base wedge shaped or flattened, with 7-9 bristle tipped lobes, often subdivided into secondary lobes by rounded sinuses; dark green above, paler below with tufts of axillary hairs.

Flower: Unisexual; staminate is in glabrous 6-7" groups; pistillate is solitary or paired on pubescent stalks.

Ecological Value: \$11.85 annual/\$935.94 total CO2 stored at maturity (i-Tree)

Description: Mature trees are large with a slightly buttressed trunk, bole is symmetrical and commonly free of branches for much of it's length. Favors deep, rich, bottomland soils and along streams and swamp borders. Usually occurring as an occasional tree in mixed hardwood forests. Ranges from eastern Pennsylvania near the Maryland line, south through Virginia, North and South Carolina to Georgia and Florida. Also in Ohio, Indiana, Iowa and Texas.

A very important timber species used for flooring, furniture, interior trim and cabinetry.



## Stations 19: Red Mulberry

Scientific name: *Morus rubra*

Mature Height: 50-60 ft

Mature Trunk Dia: 18"

Bark: Thin, dark grayish-brown, peels off in long narrow flakes

Leaves: alternate, thin, rounded or somewhat heart shaped, toothed, pointed, 3-5 inches long, rough and hairy above and soft hairy beneath. Some leaves mitten shaped or lobed.

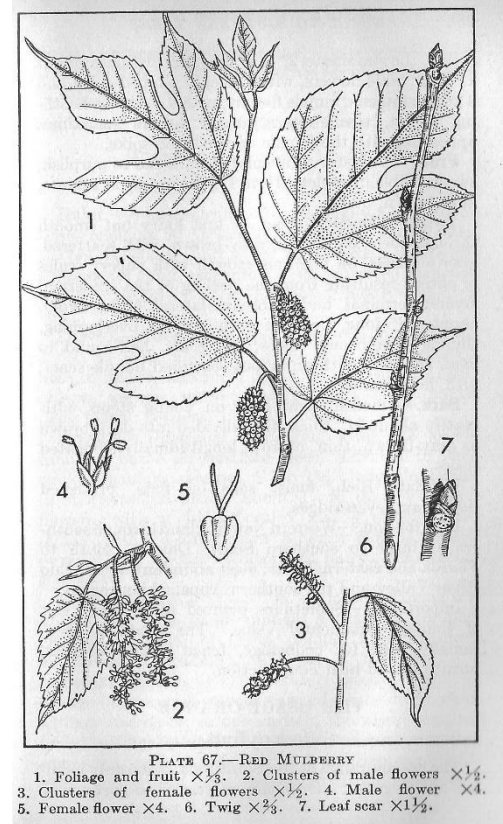
Flowers: long drooping catkins

Ecological value: \$78.70 Value of total CO<sub>2</sub> stored at maturity (i-Tree)

Description: Red mulberry occurs in eastern Texas and west to the canyon of Devils River, Valverde County. It prefers moist rich soils and generally growing in the shade of larger trees.

Sometimes planted for its fruit, but of limited ornamental value. The wood is occasionally used for fence posts, furniture and boat construction.

Indians and pioneers made a tea from the root bark to get rid of worms and as a laxative. The sap has been used to treat ringworm and the fruits have been used to reduce fever. Tea made from the leaves has also been used to treat urinary tract infections and reduce inflammation.





## Station 20, 72: Eastern Red Cedar

Scientific name: *Juniperus virginiana*

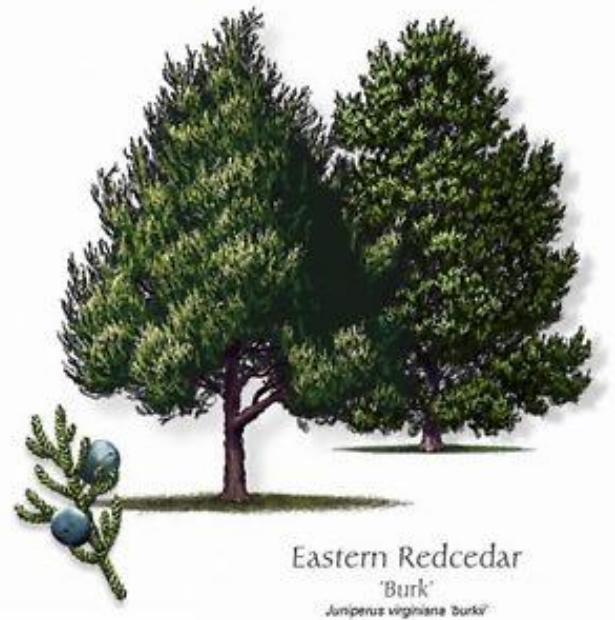
Mature Height: 40-50 feet

Mature Diameter: 18-24"

Fruit/Seed: Small, blue, berry like fruit

Leaf: Fragrant, scale-like foliage can be coarse or fine-cut, and varies in color from gray-green to blue-green to light- or dark-green

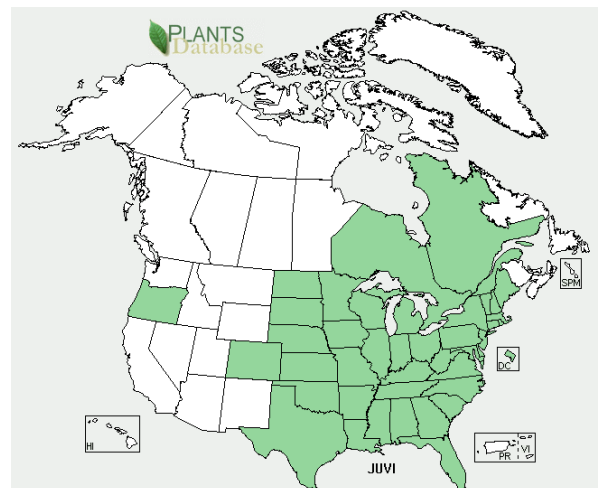
Ecological Value: \$225.88 Value of Co2 stored at maturity (i-Tree)



Description: The Eastern red cedar tree is a common sight throughout most of the plains states and eastern United States on road cuts, in fence rows and scattered across abandoned fields—especially where limestone soils are present. It is an aromatic tree, with reddish wood giving off the scent of cedar chests and crushed fruit providing a scent of the alcohol (Gin) they once flavored.

Uses: The Red cedar is used by many tribes for incense in purification and rituals. As a cure for asthma, the Gros Ventres ate whole red cedar berries or pulverized them and boiled them to make a tea. The wood of Red cedar is very durable, and was used for lance shafts, bows, and other items. Flutes made from red cedar wood were highly regarded by the Cheyenne. Cedar boughs were used for bedding.

Habitat: It is especially well adapted to dry areas. Red cedar is generally propagated by cuttings. The distribution of Red cedar (*Juniperus virginiana*) spans the U.S. east of the Rockies. The species also occurs in Oregon in the west.



## Station 22: Wax Myrtle

Scientific name: *Myrica cerifera*

Mature Height: 22 feet

Leaves: Evergreen, simple, alternate, blade narrow, elliptic or oblanceolate, 1-5 in long, usually less than  $\frac{3}{4}$  in wide, margins entire or toothed in upper half.

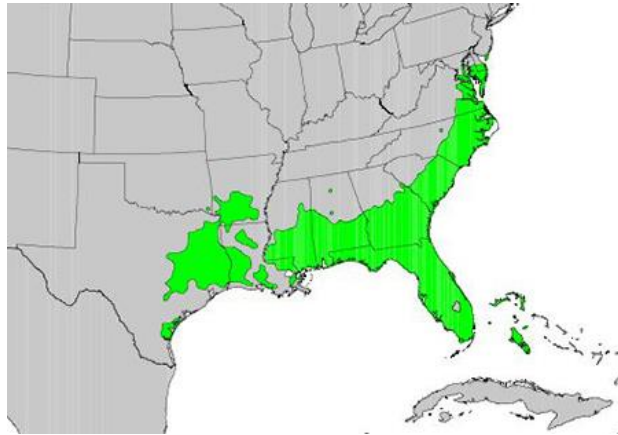
Flowers: Spring in catkins

Fruit: Hard round  $\frac{1}{8}$  inch in diameter, coated with white wax.

Ecological value: Not Applicable

Description: Wax myrtle in nature occurs from the Florida Keys north to southern New Jersey, Maryland, and Delaware; west to eastern Texas, southeast Oklahoma, and central Arkansas. It is first cousin to the Bayberry (*Myrica pennsylvanica*) whose range is more northerly, and with whom it hybridizes. Found along streambanks and in swamps and seasonally wet areas

Leaves are used as a spice, like bay leaves. The wax of the fruit has been used to make bayberry candles (a pound of berries immersed in hot water yields 4 ounces of wax). The root, leaves and berries have been used to treat diarrhea, digestive issues, sore throats and fever.



## Station 22, 40: American Beautyberry

Scientific name: *Callicarpa americana*

Mature Height: 3-8 feet

Leaves: Deciduous, simple, toothed, taper at both ends, undersides often white-hairy, aromatic and 3-9 inches long.

Flowers: Small tubular white, pink or lavender clusters in June-July

Fruit: Clusters of purple berries in August-November

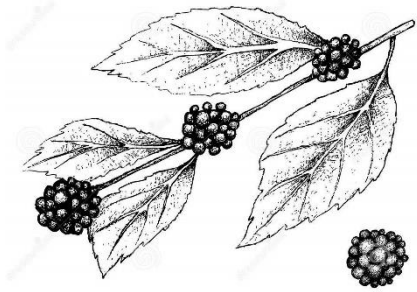
Ecological Value: Not applicable

Description: American beautyberry is also known as French mulberry, Sour bush, Bunchberry, or Purple beauty-berry. In Greek, the genus name *Callicarpa* means callos, “beauty” and carpos “fruit”. This plant is distributed throughout the southeastern United States from Texas and Oklahoma east to Maryland. It also grows in the Caribbean and northern Mexico. American beautyberry is found in woods, particularly on moist areas under open pine canopies, thickets, right of ways, and fence rows. It is adapted to moist, loam, sandy or shallow upland sites and a wide pH range. The shrub is considered a pioneer species and is characteristic of the mid stages of plant succession. This plant is very tolerant of fire. However, it is intolerant of deep shade and declines in number when mid-story vegetation is dense.

The roots, leaves, and branches were used by various Native American tribes for medicinal purposes to treat malarial fevers and rheumatism. The roots were used to treat dizziness, stomach-aches and dysentery. Roots and berries were boiled and drunk to treat colic.

In the early 20th century, farmers would crush the leaves and place them under the harnesses of horses and mules to repel mosquitoes. The farmers rubbed the crushed leaves on themselves to repel mosquitoes and biting bugs. Studies conducted by the Agricultural Research Service has shown two compounds – callicarpenal and intermedeol - are responsible for the repellent.

The fruit is high in moisture content and is an important food source for more than forty species of songbirds including the American Robin, Brown Thrasher, Purple Finch, and Eastern Towhee. The drupes or clusters are eaten by armadillo, foxes, opossum, raccoon and squirrels and White-tailed deer.



*American Beautyberry*



## Stations 24 and 54: Black Gum Tree

Scientific Name: *Nyssa Sylvatica*

Common Name: Black gum, Black tupelo, the name tupelo is of Native American origin, coming from *ito* 'tree' and *opilwa* 'swamp'.

Mature Height: 66 – 82 ft

Mature Trunk Diameter: 20 – 39 in

Ecological Value: \$669.77 Value of CO<sub>2</sub> stored by mature tree (i-Tree)

Bark: Medium gray, furrows with age, resembling alligator hide on old trunks

Leaves: Simple leaves 3 – 6” in length with an oval shape that are glossy and dark green in the summer. Spectacular fall foliage with shades of yellow, orange, bright red, purple or scarlet.

Flowers: Greenish white flowers, rich source of nectar for bees

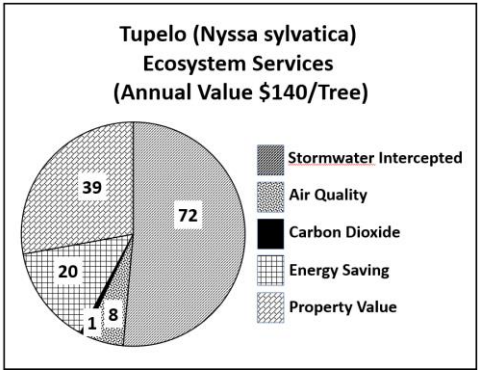
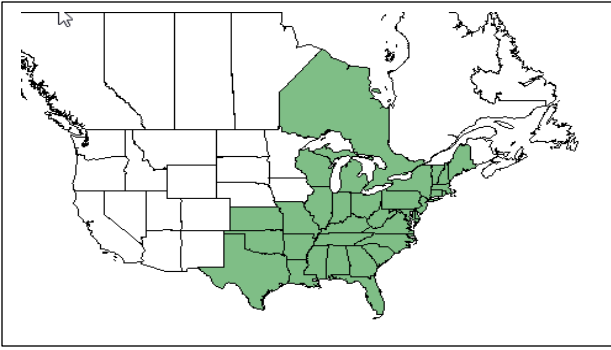
Fruit: Some produce edible small bluish-black fruit that ripens in late September and early October, eaten by many species of birds and mammals.

Habitat: Highly tolerant of wet soils and flooding. Native to eastern North America, southeastern Canada through Eastern US. Its age can exceed 650 years.

Description: Black gum is a medium-sized deciduous tree in the Dicot group that is native to eastern North America. It is a popular ornamental tree for shade and spectacular Autumn leaf colors used in parks and gardens. It is one of the best honey-producing trees.

Uses: crates, pallets, railroad ties, tool handles, pulpwood, furniture, firewood, erosion control. It is used by artistic wood carvers. Easily pulped and used for high-grade magazine & book papers. Food source for many birds, mammals, butterflies, & moths. Valued as a honey plant, producing a light mild-tasting honey. Ornamental tree used in parks & gardens.





## Station 26: Black Willow

Scientific Name: *Salix nigra*

Mature Height: 40 feet

Mature Trunk Dia: 24 inches

Bark: Brown to black, deeply fissured, flat ridges dividing into thick scales becoming somewhat shaggy with age.

Leaves: Blades 3-6 inches long and  $\frac{1}{4}$  to  $\frac{3}{4}$  inch wide with finely toothed margin.



Flowers: Yellow catkins about 1 inch long born in early spring. Male and female flowers on separate plants (dioecious).

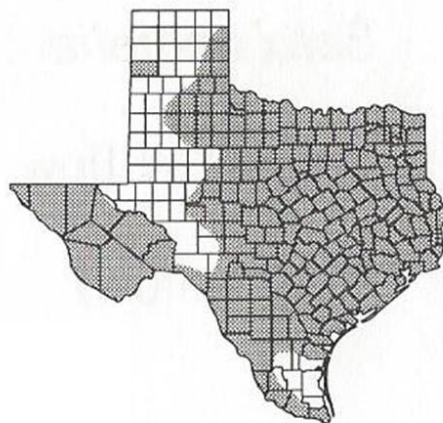
Ecological Value: \$166.88 Value of CO<sub>2</sub> stored at maturity

Discussion: Black willow is the largest and most widespread Texas willow. It is found along drainage ditches, swamps and in wet soils throughout the state. It is fast growing averaging 4 feet in growth in a year.

Uses: It's extensive root system makes it useful in erosion control. The tree roots easily from cuttings making it especially easy to plant in large erosion control projects. The wood is soft and weak, but flexible and useful in basket weaving and wicker furniture.

The bark contains salicylic acid (a component of aspirin). The Europeans and American Indians used a tea made from the bark to control fever, painful joints and rheumatic pain.

Birds feed on the buds and flowering catkins and deer eat the twigs and leaves.



## Station 28: Loblolly Pine

Scientific name: *Pinus taeda*

Mature height: 90 – 110 feet

Mature Trunk: 1 – 5 feet

Value (annual): \$188

Description: Loblolly pine, also called Arkansas pine or North Carolina pine, is a large evergreen tree and the largest of the southern pines. It reaches heights of 90' to 110' with a diameter of 1 to 5' with exceptional specimens reaching 160'. The tallest Loblolly pine currently known *stands* at 169' in Congaree National Park (SC). Loblolly pine has a long, clear trunk, ascending limbs, and a rounded, spreading crown. It is one of several pines native to the Southeastern United States, from central Texas east to Florida, and north to Delaware and Southern New Jersey. Over 50% of the standing pine in the southeast is loblolly.



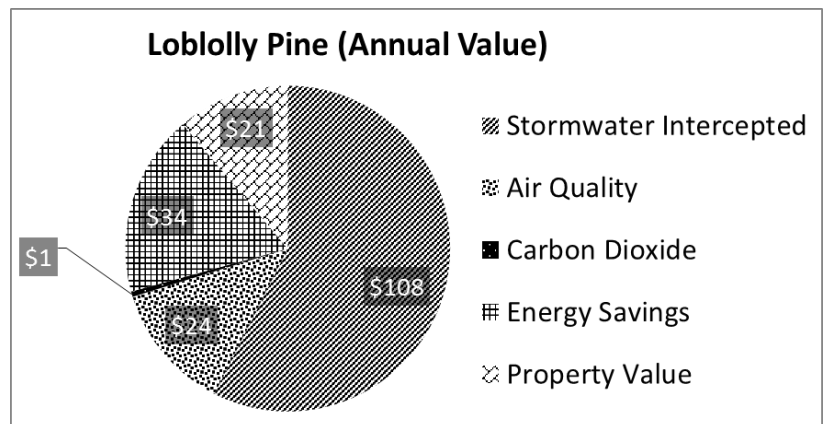
The word loblolly means "low, wet place", but these trees are not limited to that specific habitat. Loblolly Pines grow well in acidic clay soil, which is common throughout the South, and are thus often found in large stands in rural places.

The famous "Eisenhower Tree" that was on the 17th hole of Augusta National Golf Club was a Loblolly Pine. U.S. President Dwight D. Eisenhower, an Augusta National member, hit the tree so many times that, at a 1956 club meeting, he proposed that it be cut down. Not wanting to offend the President, the club's chairman, Clifford Roberts, immediately adjourned the meeting rather than reject the request outright.

Its needles are in bundles of three, sometimes twisted, and measure 4" to 9" long, an intermediate length for southern pines. They have a slight bluish-green tinge, are stiff, and sometimes slightly twisted. The needles usually last up to two years before they fall, which gives the species its evergreen character. Although some needles fall throughout the year, most needles fall during the autumn and winter of their second year.

The bark is grayish-brown and furrowed with elongate, broad, irregular plates. Young twigs are reddish-brown and scaly. Buds at the ends of branches are much thinner than associated slash and longleaf pine.

The wood, which is marketed as southern yellow pine, is primarily used for pulp and paper but also for lumber and plywood. It may be sold interchangeably with shortleaf pine. This tree is



commercially grown in extensive plantations. Loblolly pine stands are important for numerous wildlife species. The trees provide habitat for many animals, including white-tailed deer, wild turkey, gray squirrels, rabbit, quail, and doves. Many songbirds feed on the seeds and help propagate the trees through seed dispersal. Red crossbills depend on loblolly pine seeds for up to 50% of their diet. Other birds that frequent the trees include pine warblers, Bachman's warblers, and brown-headed nuthatches. Osprey and bald eagles often nest in tall loblolly pines.

Two endangered species that also use these pines are fox squirrels, which eat the cones, and red-cockaded woodpeckers (RCW), who will sometimes nest in old growth trees. There are a number of colonies of the RCW in the surrounding national forest, but most of the pine on the camp are not mature enough to host the woodpecker.





## Station 30, 34, 69: Water Oak

Scientific name: *Quercus nigra*

Mature height: 60 – 80 feet

Mature crown width: 50 – 70 feet

Trunk: 1 – 3 feet

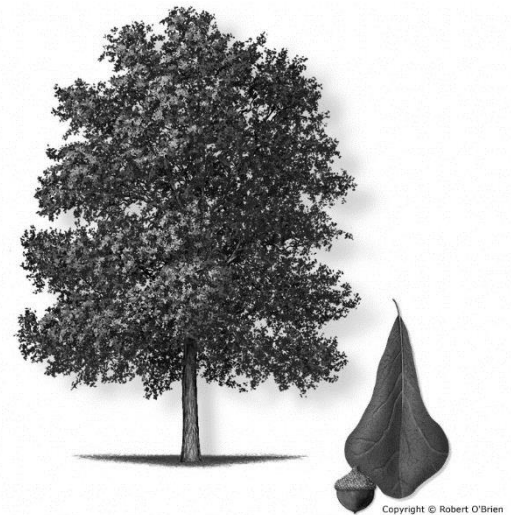
Value (annual): \$256

Description: Water oak has a spreading, rounded, open canopy, and is most often used for a naturalized landscape. The acorns are particularly abundant on Water oak and make good food for wildlife. They badly stain asphalt and concrete for several months in fall and winter. The leaves vary tremendously, from rounded and entire to three-lobed with several bristle tips but are most frequently spatulate. Water oak is deciduous in the North, semi-evergreen in the Deep South, and trees reach 60 to 80 feet in height (shorter when grown in the open) with a 50 to 70-foot spread. Some trees put on a wonderful yellow fall color show for about a week.

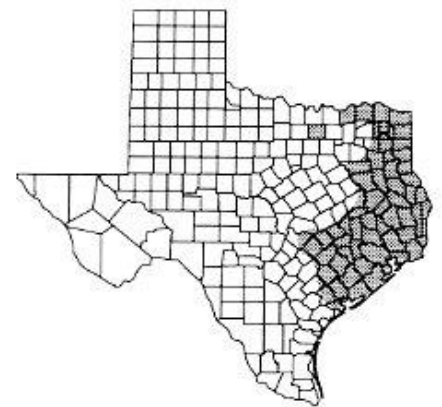
Use and Management: A rapid-grower, Water oak has a relatively short life span of only 30 to 50 years, particularly in the east on good sites where growth is rapid. Perhaps more durable and not as weak-wooded in drier areas such as Texas and Oklahoma where growth is slower.

The tree often begins to break apart just as it grows to a desirable size. For this reason, Live, Bur, Shumard, Red, White, Swamp White oak and others are much better choices. Like other oaks, care must be taken to develop a strong branch structure early in the life of the tree. This might increase the life span by eliminating the need for removing large-diameter branches.

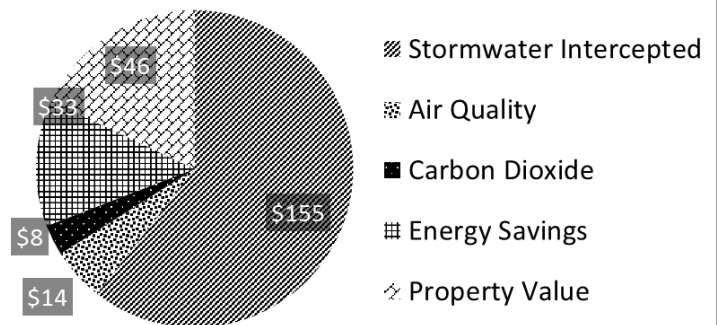
Pruning large branches from the trunk often initiates decay in the trunk. A North American native, Water oak is adapted to wet, swampy areas, such as along ponds and stream banks, but can also tolerate other well-drained sites and even heavy, compacted soils. Not adapted to highly alkaline soil but will grow well in clay. Propagation is by seed or hardwood cuttings.



Leaf pattern of Water Oak



Water Oak (Annual Value)



## Station 32, 50: Magnolia

Scientific name: *Magnolia grandiflora*

Mature Height: 60-90 (rarely 130')

Mature Diameter: 2-3' (rarely 4 ½')

Bark: Light brown to gray-brown and irregularly scaly

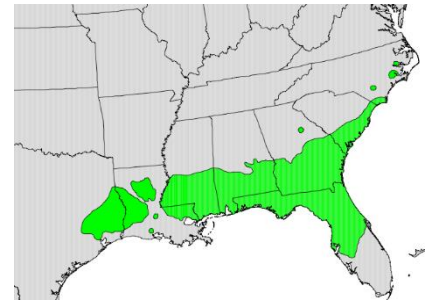
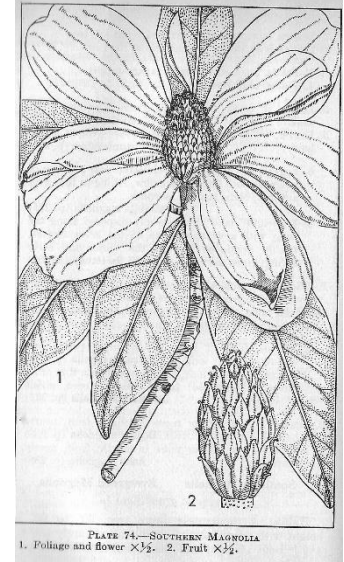
Leaves: Alternate, simple, persistent, leathery, oval, ovate or oblong, 5-8" long, 2-3" wide; upper surface lustrous green, clothed with rusty-red, wooly hairs on the lower surface. They remain on the tree for about two years.

Flower: Complete, large and showy, white, 6-8" broad, appearing after new leaf growth; 3 sepals, 6,6 or 12 petals; many pistils and stamens inserted in a spikelike center receptacle

Fruit: A rounded or oval aggregate 3-4" long containing many seeds enclosed in a covering (follicle). These open in the fall and display the bright red seeds dangling on slender threads.

Ecological Value: \$275.78 Value of CO2 stored at maturity (i-Tree)

Description: Distributed on rich bottomlands, along stream banks or on gentle protected slopes in admixture with other hardwoods. Occurs along the coastal plain from North Carolina to Florida, west through Louisiana and Arkansas to eastern Texas. One of the south's finest evergreens used ornamentally throughout the region. Limited quantity used for lumber.



Some members of this genus were used by native Americans expel worms and by frontiersmen as an anti-malarial treatment when mixed with alcohol.

## Stations 30, 33, 38: Southern Red Oak (Spanish Oak)

Scientific name: *Quercus falcata*

Mature Height: 50-80 feet

Mature Diameter: 1-2.5 feet

Bark: Dark Gray, becoming furrowed into broad and plates.

Leaves: Extremely polymorphic (has many

Leaves vary from three lobes to thirteen. They are 4-10 inches long and 2.5 to 7 inches wide. Upper and lower leaf surfaces may be hairy or hairless and all leaf forms may be found on the same tree.

Description: Grows on almost any acidified soil of east Texas. Throughout most of its range, southern red oak is usually found as individual trees in mixed stands. It is commonly associated with White oak (*Quercus alba*), Black oak (*Q. velutina*), Scarlet oak (*Q. coccinea*), Post oak (*Q. stellata*), Blackjack oak (*Q. marilandica*), Sweetgum (*Liquidambar styraciflua*), Blackgum (*Nyssa sylvatica*), and Hickory (*Carya* spp.). Southern red oak is monoecious; unisexual flowers of both sexes are borne on the same tree. The acorns ripen in September and October, the second season after flowering, and seedfall occurs during these months.

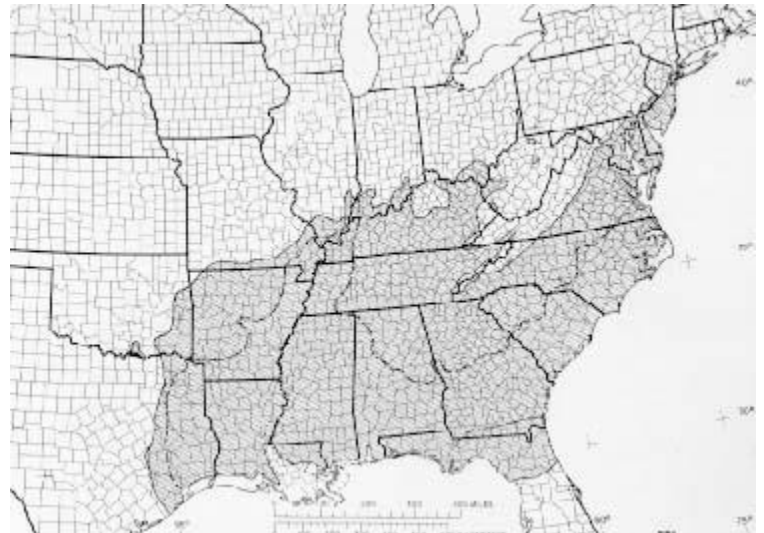
Uses: The uses of oak include almost everything that mankind has ever derived from trees-timber, food for man and animals, fuel, watershed protection, shade and beauty, tannin, and extractives



SOUTHERN RED OAK  
(Leaf and fruit, one-third natural size; twig, one-half natural size)

ridges

forms).



## Station 36 & 44 : Willow Oak

Scientific Name: *Quercus Phellos*

Mature Height: 60-80 feet

Mature trunk diameter: 24-36"

Bark: Thin and tight, gray and somewhat smooth at first becoming roughened and darker with maturity. Eventually almost black.

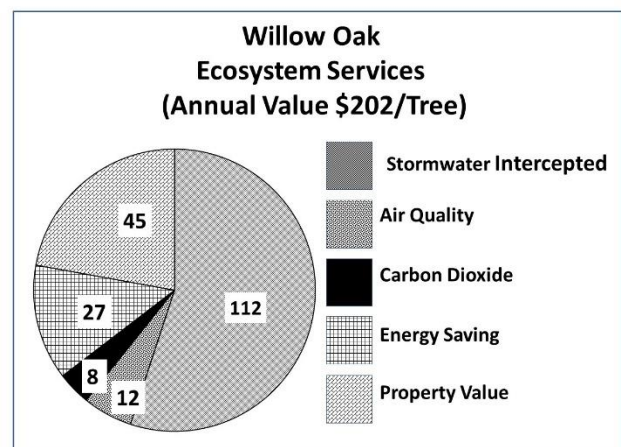
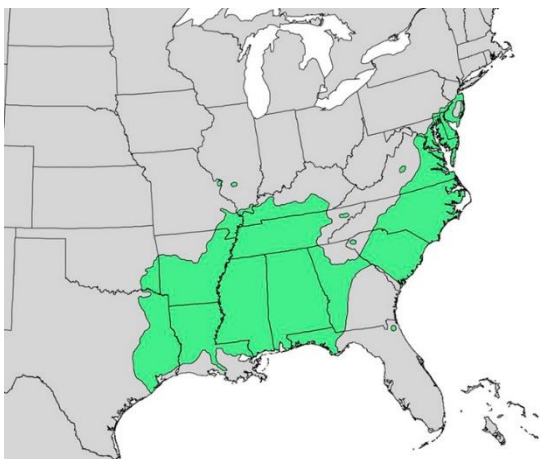
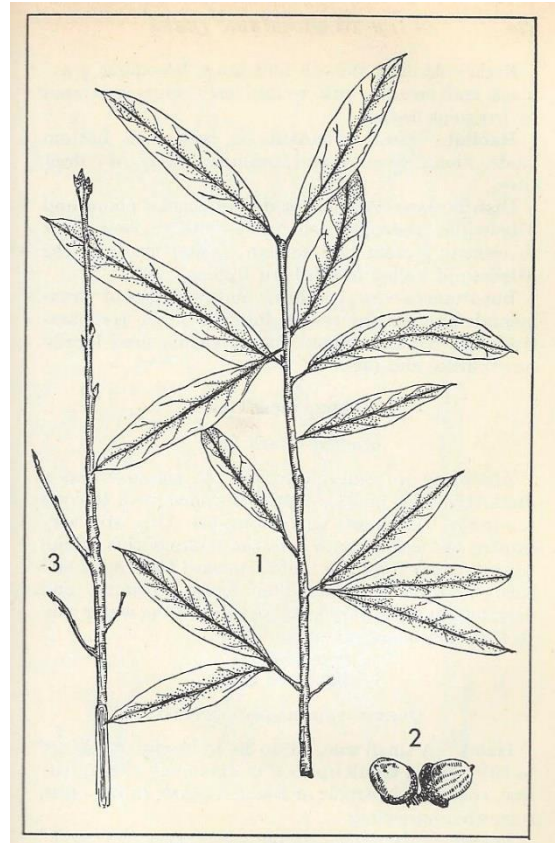
Leaves: Alternate, deciduous, turning pale yellow in the fall, 2-4 inches long and ½-1 inch wide. Shiny and light green on upper surface, smooth, dull and slightly hairy below.

Flowers: In the spring and on the same tree. Male flowers in hairy drooping catkins. Female flowers tiny and in clusters at leaf axis.

Ecological Value (annual) \$202

Description: You are located within a stand of relatively young Willow oak. It is a member of the Red oak group and when mature it is a large tree with a conical crown and straight trunk. It is usually found along streams and in wetlands in frequently flooded bottomlands and rarely in uplands unless planted as a landscape tree

Uses: Landscaping, wildlife food/habitat, rail road timbers, pallets. While the acorns may be eaten they are rather small and bitter due to the high tannin content. The tannins can be leached out, but with some loss of the mineral content. The gall are highly stringent and have been used to treat hemorrhages, diarrhea and dysentery. The roasted and ground acorn shells have been used as a coffee substitute.



## Station 40: Gayfeather with Beautyberry

Scientific Name: *Liatris* species

Height: 2-6'

**Flowers:** Flowers (florets) are tiny and grouped into flowerheads. Unlike more famous members of the sunflower family, blazing stars have no petal-like ray florets. With only disc florets, the flowerheads look fuzzy. *Liatris* flowers are typically pink to reddish purple or magenta, rarely white; the styles (elongated pistil tips) are 2-branched, threadlike, and protrude far outside the 5-lobed petal tube.



**Description:** Gayfeather is a flowering perennial plant of the tall grass prairie with tall spikes of showy purple or white flowers. Also called blazing star or prairie star, *Liatris* spp. is a member of the Asteraceae family and is natively found growing across the United States in scrubs, sandhills, flatwoods, and upland pines. These tough conditions have enabled *liatris* to endure drought and other hardships once established. The plant blooms from the top down as opposed to from the bottom up.

The flowers are a favorite of butterflies and bees. Generally not a favorite browse for deer, but the seeds are eaten by finches, bluebirds and other seed eating birds.several species of birds.

The plant was used medicinally by native Americans. The roots were dried and ground for use as a pain reliever for headaches, arthritis and earaches. The roots were also used to treat fevers. The leaves were used as an antiseptic wash.

## Stations 41, 46, 64: Flowering Dogwood

Scientific name: *Cornus florida*

Mature Height: 30'

Mature Diameter: 12"

Bark: Up to 3/8" thick, dark brown to nearly black, breaking into many squarish, polygonal scaly blocks (alligator bark on older trees).

Leaves: Opposite, simple, deciduous, 3-6" long, 1 1/2 -2" wide; usually oval with pointed tip; margin entire, primary veins curved upward.

Flower: appearing with the leaves, white, 4 large petal like bracts, 2-4" diameter

Fruit: Bright red, ovoid, about 1/2" long and 1/4" in dia., born in clusters of 2 to several.

Ecological Value: Not Applicable

Description: Dogwood grows in the forests of east Texas and throughout the forests of the eastern United States. It prefers moist, rich, deep soils near streams and on slopes usually growing in the shade of other hardwoods.

Thirty different animals and thirteen species of birds feed on the berries. The tree also ranks #13 as a browse favorite. The berries are not considered edible by humans as they are quite bitter and may irritate the stomach.

In colonial times a brew made from the bark was used treat fever. The bark contains quinine and the brew was also used to treat malaria. A poultice made from the leaves is anti-inflammatory and analgesic and was used to treat cuts, burns and other skin wounds. Indians also obtained a red dye from the roots and spear shafts from the stems. Peeled and chewed twigs make a good toothbrush.

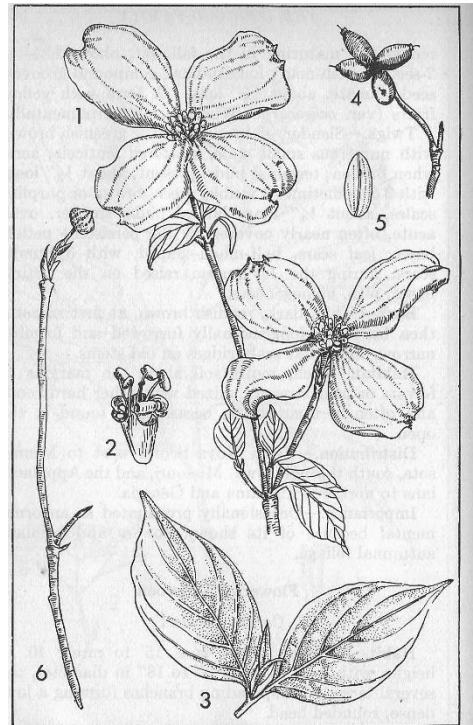
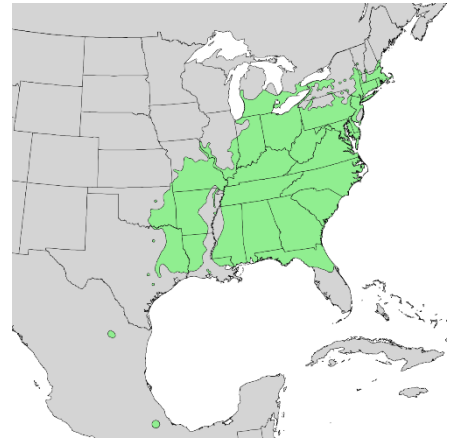


PLATE 164.—FLOWERING DOGWOOD  
1. Flowers with attending bracts  $\times \frac{1}{2}$ . 2. Flower  $\times 3$ .  
3. Foliage  $\times \frac{1}{2}$ . 4. Fruit cluster  $\times \frac{3}{4}$ . 5. Pit  $\times 1 \frac{1}{2}$ . 6. Twig  $\times \frac{3}{4}$ .



## Station 43: Red Maple

Scientific name: *Acer rubrum*

Mature Height: 40-50'

Mature Diameter: 1-2'

Bark: Thin, smooth gray in young trees becoming thicker and furrowed in older trunks and ultimately becoming divided into long narrow ridges covered with scaly plates

Leaves: Opposite, simple, deciduous, circular, 3-6" in dia, palmately 3 to 5-lobed; margin coarsely and irregularly serrate; petioles red or reddish-green. 2-4" long.

Flower: Polygamous appearing before the leaves

Fruit: A red twinned samara born in clusters on long slender stalks, red or yellow.

Ecological Value: \$142.41 Value of CO<sub>2</sub> stored at maturity (i-tree)

Description: A medium sized tree; in the open branching near the ground to form a dense oblong head; in the forest free of branches for the first 30'. Most common in moist bottomlands, along streams and in swamps, but also found less commonly on drier, higher ground; commonly associated with oaks, Black ash and Black tupelo. Distributed from southern Newfoundland west through Quebec and Ontario to northern Minnesota south through eastern Iowa and Missouri to eastern Texas in the West and southern Florida in the East.

As fast-growing generalists, Red maples have taken up a spot as one of the most abundant trees in the forest, even though they are highly susceptible to diseases and pests. After fires or hurricanes, when many trees are decimated, red maples spring up quickly and can become the dominant species in the forest. The extensive growth of this species is kept in check by, deer, and rabbits, which enjoys red maples as a favorite treat. Of some value as a source of wood for furniture and woodworking. Desired as an ornamental tree for it's shape and fall colors and has been tapped for it's sap when Sugar maple was not available.

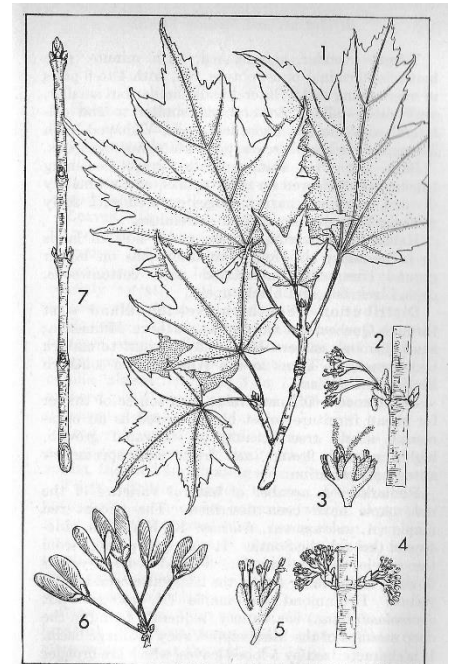
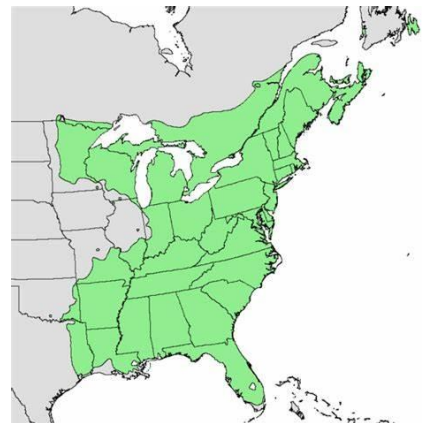


PLATE 134.—RED MAPLE  
1. Foliage  $\times \frac{1}{2}$ . 2. Cluster of female flowers  $\times 1$ . 3. Female flower  $\times 3$ . 4. Cluster of male flowers  $\times 1$ . 5. Male flower  $\times 3$ . 6. Cluster of fruit  $\times \frac{1}{2}$ . 7. Twig  $\times \frac{1}{4}$ .



## Station 48, 52: White Oak

Scientific name: *Quercus alba*

Mature Height: 80' (max 150')

Mature Diameter: 3 (max 5')

Bark: Thin light ashy gray and covered with loose scales or broad plates.

Leaves: Alternate, simple, 5-7 inches long and about half as broad. They are divided into 5-9 rounded finger-like lobes. The young leaves are a soft silver-gray, yellow or red while unfolding.

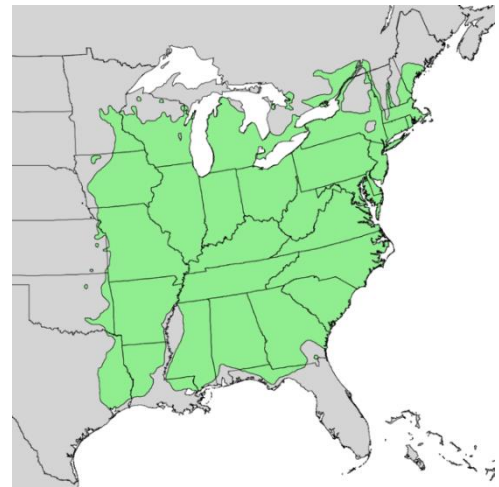
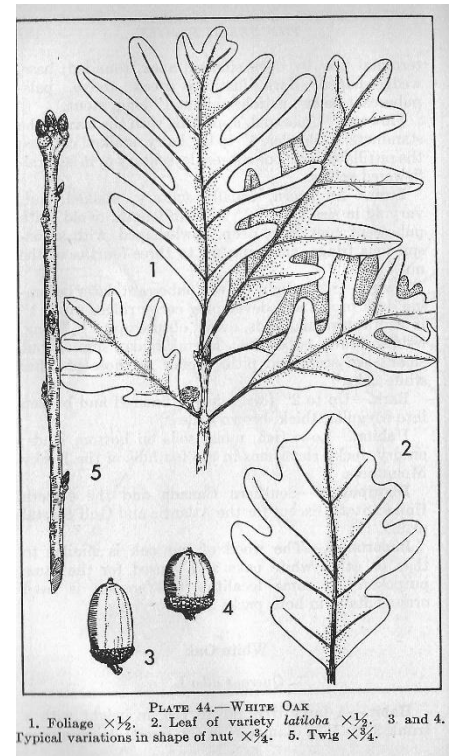
Flower: unisexual, stamens appearing with the leaves in loose pendulous catkins; pistillate flowers are solitary and bright red.

Fruit: An acorn, solitary or in pairs

Ecological Value: \$1002.32 Value of CO<sub>2</sub> stored at maturity (i-Tree)

Description: It ranges over most of the eastern half of the United States. In Texas it ranges throughout east Texas to the Brazos River. It's habitat is variable, but it reaches it's largest size in moist, rich soils usually in an admixture with other species. Early pioneers looked for White oak as an indication of fertile soil for farming.

This is the most important timber species among the white oaks. Widely used for shipbuilding and general construction. It is the favored wood for whiskey barrels due to it's impermeability. The acorns are rich in fat and protein and were a staple food of the indians due to the lower tannic acid content. However, they still need to be soaked or boiled in water to make them more palatable. The nuts are eaten by a number of wildlife species and are a favorite of hogs, deer and livestock.





## Station 50: American Holly (with Blackhaw Viburnum, Flowering Magnolia and Red Maple across the stream).

Scientific name: *Ilex opaca* Aiton

Mature Height: 15-30 feet

Max Height: 100 feet

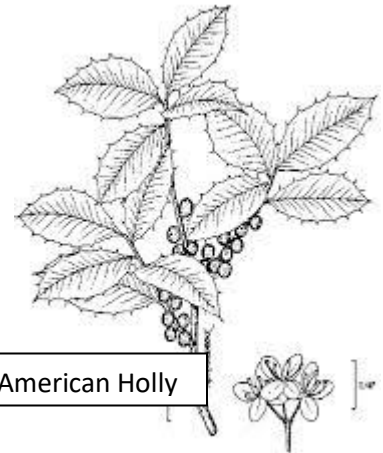
Mature Trunk Diameter: 1.5 feet

Max Trunk Diameter: 4 feet

Leaves: 2-3 in long

Value: Not Available

Description: The American holly is a medium-sized broadleaved evergreen related to yaupon. The bark is light gray, roughened by small warty lumps. The branchlets are stout, green at first and covered with rusty down, later smooth and brown. The winter buds are brown, short, obtuse or acute. The leaves are often pale yellow beneath; the edges are curved into several sharp, spike-like points, and a wedge-shaped base and acute apex; the midrib is prominent and depressed, the primary veins conspicuous; the petiole is short, stout, grooved and thickened at the base with a pair of minute stipules. The leaves remain on the branches for two to three years, finally falling in the spring when pushed off by growing buds



Uses: The attractive evergreen foliage and bright red fruit of this small tree make it very popular for landscaping. The same attributes that allow this tree to be a desirable ornamental make it one of the most sought after greens for Christmas decoration. The firm bright red berries are consumed by white-tail deer and 18 species of birds. The dense foliage also provides cover and nesting habitat for various songbirds. Native Americans chewed the berries for colic, indigestion, laxative and to induce vomiting. They used leaf tea for measles, colds, flu, pneumonia and externally for sores and itching and bark tea for malaria. However, as with other members of *Ilex*, the berries are considered poisonous to humans and especially dangerous to small children.

Habitat: The trees do best in rich moist soils attaining heights of up to 60 feet, but also grow well in upland locations.

## Station 53, 62, 77: River Birch

Scientific name: *Betula nigra*

Mature Height: 40-70 feet

Fruit/Seed: The fruit is unusual among birches in maturing in late spring; it is composed of numerous tiny winged seeds packed between the catkin bracts

Leaf: The leaves are alternate, ovate, and broad, with a serrated margin and five to twelve pairs of veins.

Mature Value (annual): \$150

Description: As its name suggests, the river birch naturally grows along river banks. But as a landscape tree, it can be planted almost anywhere in the U.S. The species is valued for its relatively rapid growth, tolerance of wetness and some drought, unique curling bark, spreading limbs and relative resistance to birch borer. The river birch has not yet reached the popularity of many maples and oaks, but it is well on its way.

Uses: River birch, as an ornamental tree, offers fall and winter color to parks, yards and street sides. Its durable wood is easy to work with and is used to make a variety of items, including toys, artificial limbs and flatware. River birch also is valuable as a source of erosion control and is used to reclaim areas with high soil acid caused by mining. Wildlife, such as birds and rodents, eat its seeds, and deer eat its twigs and foliage.

Habitat: River birch (*Betula nigra*), also known as Red birch, Black birch or Water birch, is native to the southeastern United States where the trees typically grow in thickets along rivers and lakeshores, as well as on floodplains, sandbars and islands in streams.

The wood is too knotty for use as timber, but has been used to make inexpensive furniture and toys. It has been used to make birch beers and vinegar. The trees are especially good for erosion control along riverbanks due to its strong roots. Additionally, the bark contains flammable oils that make it both flammable and waterproof. It can be used to start a fire or as waterproof paper. Thomas Jefferson has been quoted in a letter as describing birch bark as the best paper for taking field notes in wet conditions



Eastern Native American tribes would boil the sap to use as a sweetener. The Catawba boiled the buds for treatment of ringworm and sores. The Cherokee chewed the leaves to treat dysentery and make a tea of the bark to treat colds, stomach-ache and urination difficulties. Pioneers also used the tree to treat wounds and urinary pains.

## Station 50, 58, 68: Blackhaw Viburnum

Scientific name: *Viburnum rufidulum*?

Mature Height: 25'

Mature Diameter: 6"

Bark: Dark brown to early black, divided longitudinally and transversely into fissures giving the appearance of alligator leather closely resembling that of flowering dogwood.

Leaf: Opposite, simple, deciduous, mostly oval, 2-3" long and 1- ½" wide; margin finely serrate; dark green, glossy above, paler below. Distinguished from *V. prunifolium* by having scattered rusty-red hairs along mid-rib and principal veins and rusty-red hairs clothing petiole.

Flowers: white to cream colored with five petals and five stamens appearing in dense clusters in the spring.

Fruit: bright blue, oval drupe over ½" long. Fruit is edible with a raisin-like taste and can be eaten raw or cooked

Description: This small tree grows throughout east and most of central Texas with a small population in the Davis Mountains of west Texas. It is usually an understory tree growing along streams and in moist woods. It is valued as a landscaping tree or shrub. Foxes, deer and a number of birds and other wildlife feed on the fruits. Pioneers used the fruit in jellies, sauces and stews. The bark of the root was used by Indians and pioneers to treat dysmenorrhea, asthma and diarrhea, but modern science has not been able to document its effects.



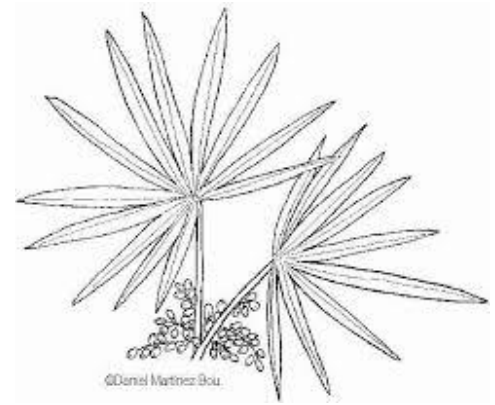
## Station 60: Palmetto

Scientific name: *Sabal minor*

Max. Height: 7-10 feet

Value: not available

Description: *Sabal minor*, commonly known as the **Dwarf Palmetto** or **Bush palmetto**, is one of about 14 species of palmetto palm. It is native to the southeastern United States. In former times, it was said to be native as far north as southeastern Virginia, but its current known range begins about 10 miles south of the Virginia border on Monkey Island in Currituck County, North Carolina, and continues south to Florida. It is widespread along the gulf coast through Louisiana into eastern Texas north to Oklahoma.



Leaf pattern of Palmetto

Although it is mainly found in the southern states, it is one of the only palms that can stand somewhat cooler temperatures. It is one of the most frost-tolerant palms, surviving temperatures as low as  $-18^{\circ}\text{C}$  (among North American palms. It's cold-hardiness is variable throughout its range with the Oklahoma native population believed by many to be the cold-hardest population. This palm may be hardy to zone 6B.



The Dwarf Palmetto grows up to 1 m (rarely 3 m) in height, with a trunk up to 30 cm diameter. It is a fan palm, with the leaves with a bare petiole (stem) terminating in a rounded fan of numerous leaflets. Each leaf is 1.5–2 m long, with 40 leaflets up to 80 cm long, conjoined over half of this length. The flowers are yellowish-white, 5 mm across, produced in large compound panicles up to 2 m long, extending out beyond the leaves. The fruit is a black drupe 1–1.3 cm long containing a single seed. It has been confused with the Saw Palm (*Serenoa repens*) although the Saw Palm has a saw-like petiole stem.

Habitat: It grows in clumps or dense thickets in sandy coastal lands or as undergrowth in pine woods or hardwood bottomlands. Stands of Dwarf palmettos when present with other water tolerant trees and clay rich soils are a good indication of possible wetlands and/or consistent flooding. Erect stems or trunks when present are also often a sign of regular flooding. It is extremely slow growing, and long lived, with some plants, especially in Florida where it is known as simply the palmetto, possibly being as old as 500–700 years.

## Station 71: Hackberry

Scientific Name: *Celtis occidentalis*

Mature Height: 40-60'

Mature Diameter: 12-20"

Bark: Grey Brown to silvery gray, featuring many corky warts and ridges, particularly on the lower part of the trunk; scaly on older trees

Leaves: Alternate, simple, deciduous, 2½ - 4" long, 1½-2" broad, ovate to ovate-lanceolate; margin sharply serrate; hairy along principal veins below.

Flower: without petals appearing with leaf emergence

Fruit: Globular purple drupe about 1/3" in diameter.

Description: A large tree sometime reaching gigantic proportions, but normally medium height. In the forest it develops a long columnar, occasionally buttressed trunk and a narrow round-topped crown. In the south it prefers rich, moist soils in association with other hardwoods. Distributed throughout the central United States and Canada States.

Of secondary importance in the lumber industry, The wood has been used in the manufacture of furniture and occasionally planted for decorative purposes. The fruit is a source of food for many game birds, particularly quail, turkey, pheasant and grouse.

The American Indians ate the dried or fresh berries or prepared them in a variety of ways as a dietary supplement. The Kiowa pounded the berries into a paste they molded into a stick to bake over an open fire. Similarly the Comanche beat the berries to a paste and mixed with fat and rolled the mixture into ball to roast over the fire. Other tribes made jellies and dried cakes. Other uses included a condiment to flavor meat and porridge and to flavor meat,

The Houma used the bark for sore throat while the Navaho boiled the leaves and branches to make a dark brown or red dye to color wool.

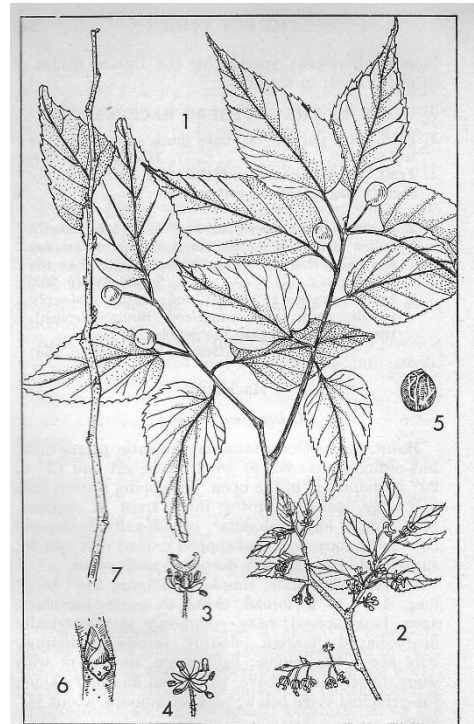
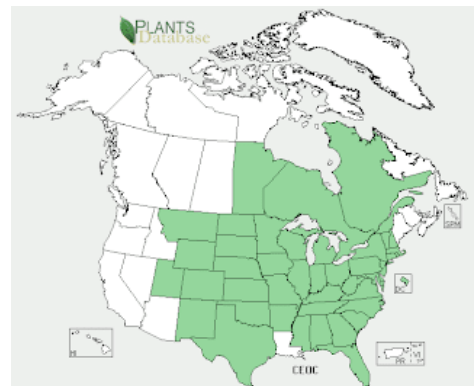


PLATE 66.—HACKBERRY  
1. Foliage and fruit  $\times \frac{1}{2}$ . 2. Flower clusters  $\times \frac{1}{2}$ . 3. Female flower  $\times 2$ . 4. Male flower  $\times 2$ . 5. Pit  $\times 1 \frac{1}{2}$ . 6. Leaf scar  $\times 2$ . 7. Twig.  $\times 1$ .



**Station 72: Sumac? species**

## Station 75: Mockernut (White) Hickory

Scientific Name: *Carya tomentosa*

Mature Height: 60'

Mature Diameter: 12-24"

Bark: Dark gray, hard and deeply furrowed, often cross-furrowed or netted.

Leaves: Large, pinnately compound, deciduous, strong-scented and hairy; composed of 7-9 leaflets pale to orange brown on lower surface.

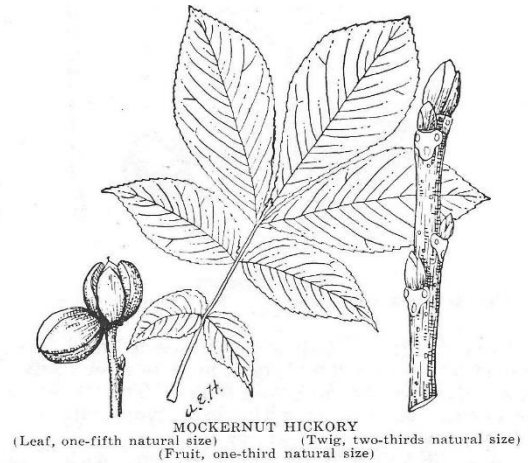
Flower: tiny; greenish; in early spring before the leaves emerge; males in slender drooping catkins about 5-5" long.

Fruit: Nuts 1 ½ to 2" long, round or pear shaped and occur solitary or in pairs. The seed is dispersed from September through December. The tree requires a minimum of 25 years to reach commercial seed bearing age with optimum seed production at 40 to 125 years. Good seed crops occur every 2-3 years with light seed production in intervening years

Ecological Value: \$199.07 Value of CO<sub>2</sub> stored at maturity (i-Tree)

Description: The most abundant of the hickories it is a large slow growing tree with rounded crown found on moist upland soils in association with oaks and pines and less commonly in bottomlands. It sometimes can reach 500 years in age. Noted for its white wood, it ranges throughout most of the southeastern United States west to east Texas and Missouri. The wood is heavy, hard and strong and used in the manufacture of agricultural implements, tool handles, wagons and sports equipment. The nuts are consumed by many species of birds and other animals including Wood Duck, Red-bellied Woodpecker, turkey, squirrels, Eastern Cottontail, Red Fox and White-tailed Deer. Deer also browse on the foliage.

The name "Mockernut" comes from the large, thick shelled fruit with very small kernels of meat inside.





## Station 76: Arrowwood Viburnum with River Birch, Little Hip Hawthorn and Green Ash

Scientific Name: *Viburnum dentatum*

Mature Height: 3-15 feet

Bark: gray, grayish brown to reddish brown

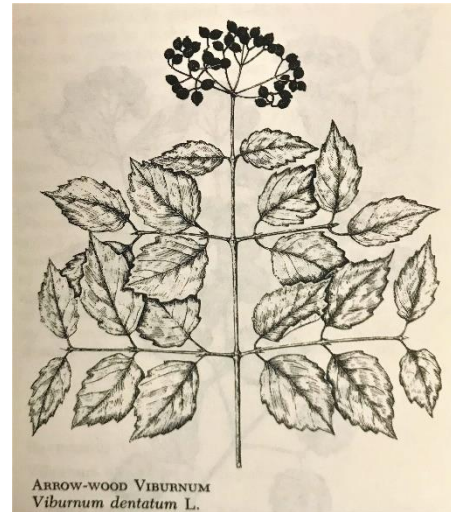
Leaves: Opposite, blade 1-4½" long, margin serrate to dentate, teeth rather triangular

Flowers: Mature in June-August, occur in flat topped clusters of small white flowers.

Fruit: Bluish-black drupe, ripening in August-November

Description: Small to medium sized shrub. Branches are slender and elongate. Main stem either solitary or numerous from a clumped base. Very variable in size and shape of leaves and flower clusters. Can occur in many type of soil, but prefers moist sandy lands. Occurs from east Texas eastward to Florida and north to Massachusetts.

Indians used the straight shafts to make arrows



## Station 78, 76: Little Hip Hawthorn

Scientific name: *Crataegus spathulata*

Mature Height: 15-20 feet

Fruit: Red or orange apple like fruit; edible

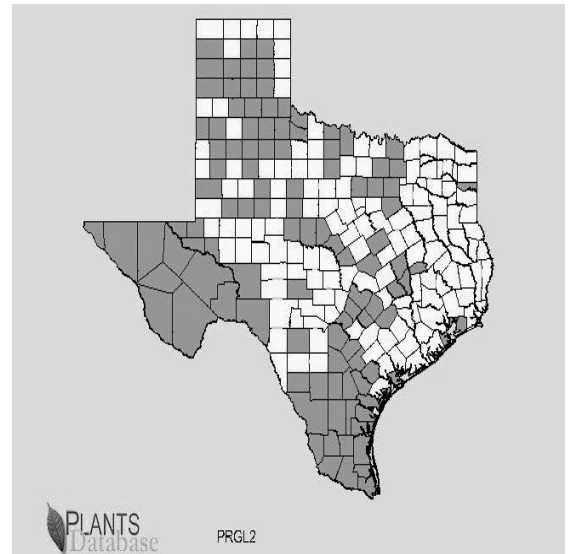
Value (annual): Not Available

Description: The Littlehip hawthorn is a deciduous tree reaching up to 20 feet. The low branched understory tree has reddish brown branches and is very twiggy. As a whole, the tree has a large spread and has an umbrella shape to it. Littlehip hawthorn has 1/3rd inch wide, 5-petaled white flowers in dense clusters. The flowers appear in mid spring are somewhat fetid smelling and often pollinated by flies and bees.



Uses: Littlehip hawthorns are not used too often for landscaping as they take a very long time to grow to their full potential. Typically, they mostly offer shade with their wide branches and massive spread. The “haws” or fruit are edible and offer food for lots of wildlife. The leaves are also edible but are thick and bitter tasting. The wide spread and thin branches also offer birds a comfortable home to nest.

Habitat: The tree is overall a very hardy species and once established can tolerate drought and floods. The family of this tree has dominated southern United States and continues to hybridize with around 200 species of Hawthorn around today.



Various parts of hawthorns have been used medicinally to treat various heart ailments including improving heart rate, lowering blood pressure and cardiac output. The bark has been used to induce sweating to induce sweating. The berries have been used topically to reduce swelling, itching, help wounds heal due to their anti-inflammatory properties.

## Station 80: Post Oak

Scientific Name: *Quercus stellata*

Mature Height: 50'

Mature Diameter: 18-22"

Bark: Thick, Gray, at first blocky or scaly, later deeply irregularly fissured with platelike scales.

Leaf: Alternate, deciduous, leathery, often having the appearance of a cross, 5 to the two central lobes often squarish to give the leaf a cross-like appearance.

Flowers: Unisexual, appearing with the leaves.

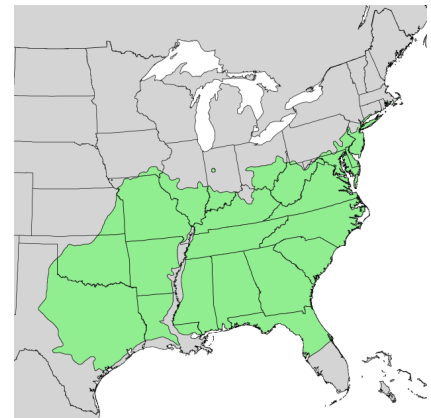
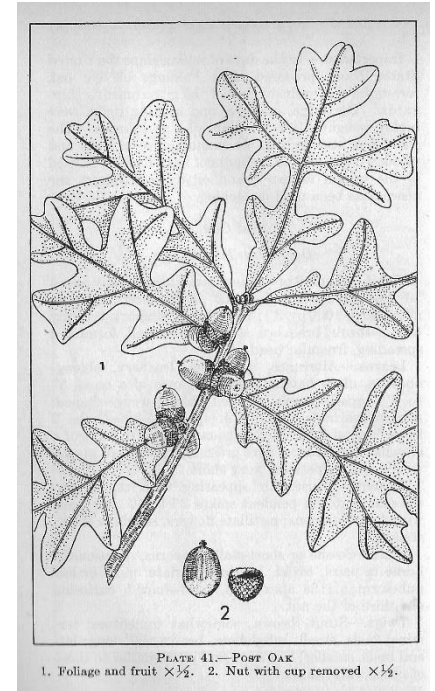
Fruit: Sessile or short stalked acorns, occasionally born in pairs; ovoid,  $\frac{3}{4}$ " long.

Ecological Value: \$174.65 Value of CO<sub>2</sub> stored at maturity (i-Tree)

Description: A small or medium sized tree; more rarely a short scrubby tree or shrub. Prefers dry, sandy soil or rocky slopes and ridges. Less commonly in rich bottom lands throughout the southeastern and eastern states to Massachusetts.

It is resistant to rot, fire and drought. Commonly interbreeds with other oaks.

Widely used for shipbuilding, construction, barrels farm implements. The acorns are a substantial part of the squirrels diet. The also constituted a substantial part of native Americans' diet after removing the tannins.



## Station : Poison Ivy

Scientific Name: *Toxicodendron radicans*

Common Name: Poison Ivy.

Ecological Group: Dicot in the family Anacardiaceae

Mature Height: N/A

Ecological Value: N/A

Maximum Height: > 100 ft as climbing vine, 4 ft as a shrub, 10 inches as trailing vine



Bark: The bark of Poison Ivy is gray. Vines climbing a tree will have fine hairy roots growing from bark attaching the vine to the tree trunk.

Leaves: Leaves are deciduous; alternate; compound with 3 leaflets; leaflets are ovate and irregularly toothed; shiny green above, paler below.

Flowers: Flowers small and yellowish-green, borne in clusters.

Fruit: The fruit is greenish-white berries; round, about  $\frac{1}{4}$  inch in diameter; borne in hanging clusters; ripe in late summer; persists through winter; fruit is favorite food for birds who spread the seed widely.

Habitat: Prairies; woodlands; glades; waste ground; fence rows; bluffs; thickets; roadsides; railroads; nearby. Prefers rich soil with good drainage and plenty of water but can grow almost anywhere. Likes full sun but can tolerate partial shade.

Description: Poison Ivy is upright, climbing, or trailing shrub that bears small yellowish-white flower clusters; old stems, covered with fibrous roots, look hairy. Poison Ivy is extremely variable in form, occurring as a ground cover along roadsides, an erect shrub (especially in sandy coastal areas), or a large vine on trees. Red fall foliage is especially conspicuous. The plant is well-known for causing an itchy, irritation, and sometimes painful rash in most people who touch it.

Uses: The small fruits of poison ivy are known to provide food for at least 75 species of birds, especially wild turkey, bob-white quail, ruffed and sharp-tailed grouse, and ring-necked pheasants and mockingbird.

**Eastern Poison Ivy**  
Ground AND Climbing Vine



[www.poison-ivy.org](http://www.poison-ivy.org)

