

Zion Nature Sanctuary Tree Map and Guide



ZIONSVILLE
PARKS & RECREATION



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Zion Nature Sanctuary Tree Map

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POPLAR ST.

SCENIC OVERLOOK 23

INTERMITTENT STREAM

SEASONAL MANMADE WETLAND

OUTDOOR CLASSROOM SHELTER

PARKING AREA (3 STALLS)

EAGLE ELEMENTARY SCHOOL

BEECH ST.

Zionsville Parks Tree Map

Zion Nature Sanctuary
690 Beech Street

www.zionsville-in.gov/parks
Updated 2017

LEGEND

-  CRUSHED GRAVEL TRAIL
-  RUSTIC TRAIL
-  FOOT BRIDGES
-  STAIRS
-  APPROXIMATE BOUNDARY

 N NOT TO SCALE

Zion Nature Sanctuary is open dawn to dusk

Northern Red Oak

Quercus rubra

The Northern red oak is widely distributed across the Eastern United States and Canada. Reaching heights of 50 – 90 feet, it grows farther north than any other red oak species.



Pointed leaves are 4 – 9 inches long. Leaves turn reddish brown in the fall.



Acorns are 1/2 to 1 inch long. The cap is flat and shallow, resembling a beret. Acorns mature every two years and are very bitter. Native Americans used acorns as a food source. To prepare the acorns, they were boiled, leached with ashes, and were then soaked in water for many days over the winter.

Older bark develops wide, flat-topped ridges and shallow furrows. The shallow furrows form a pattern resembling ski tracks or light and dark zebra stripes.



The red oak is monoecious (both male and female flowers on the same tree). Male flowers are yellow-green slender, hanging catkins, 2 to 4 inches long. Female flowers are on short spikes, appearing with the leaves in spring.



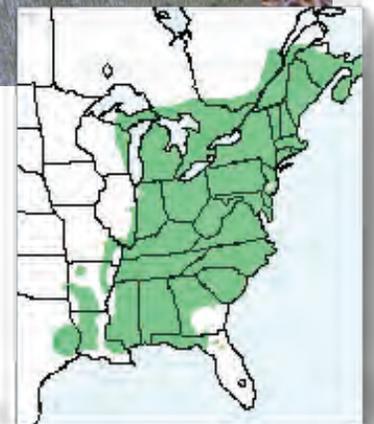
American Beech

Fagus grandifolia

Beech-maple forests were once dominant in large parts of Ohio, Indiana, Kentucky and Michigan. The beech is a slow growing, shade tolerant tree that can live 300 – 400 years. It forms a close association with sugar maples. It is common to find young beech trees growing under maples, and young maples growing underneath mature beech trees. The trees can form stands through root suckers.



Important native tree for wildlife, as squirrels, raccoons, deer and many other animals eat the triangular shaped beechnuts. Fruit is abundant every third year on any one tree. The extinct passenger pigeon fed heavily on beechnuts.



Easy to identify by its smooth gray bark, the tree can suffer from several different diseases that will deform the bark.

In winter, it's common for yellow leaves to remain on young beech trees. Pioneers once used the winter leaves to stuff mattresses.

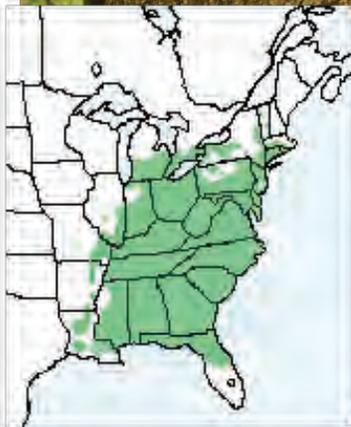


Tuliptree

Liriodendron tulipifera

The state tree of Indiana, and often the tallest tree in the forest. Southern range tuliptrees have been recorded up to 200 feet tall with an 8 – 10 foot diameter trunk.

Also called yellow poplar because of its heartwood color, but not a poplar but a member of the Magnolia family. Bark is light gray-green and smooth when young, later developing flat-topped ridges and conspicuous white colored furrows in diamond shaped patterns. On older trees sapsucker holes are common.



Leaf resembles the outline of a tulip, and turns yellow in the fall.



The showy flower was once Indiana's state flower. The flower is also tulip shaped with yellow-green petals and an orange corolla. The flower has a slight cucumber odor and is an important food source for bees.



Seeds are a cone-like collection of samaras. Each samara is winged and matures in early fall. The bases persist into the following spring and resemble wooden flowers high in the tree.



Eastern Sycamore

Platanus occidentalis

This tree is one of the tallest of the hardwood trees, growing upwards to 100 feet tall with massive spreading branches. Found near rivers, creeks and other bodies of water as the tree prefers moist soil.

Fast growing and long lived 500 - 600 years, the sycamore is easily recognized by its mottled, exfoliating bark. The bark is thin and mottled brown, green, tan and white, resembling camouflage as it peels off in large flakes.



It has the largest leaves of our native trees and can have the largest diameter of all the eastern hardwood species, approximately 15 feet. Native Americans used to use the trunks of the trees to make dugout canoes up to 65 feet long.

Flowers appear in dense round clusters.



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The fruit form a sphere of multiple achenes on a 3 to 6 inch stalk. Each seed is tiny, winged, and 1/2 inch long; maturing in November. In winter, the persistent fruits resemble Christmas



tree ornaments.



American Basswood

Tilia americana

Also called the American linden, it forms an important association with oaks, ashes and maple trees in the forest. This medium-sized tree can reach up to 80 feet tall. Older trees will often sprout new growth from the base. When cut down the stumps will sprout prolifically, often resulting in clumps of several trees.

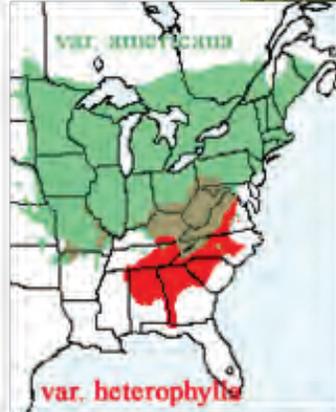
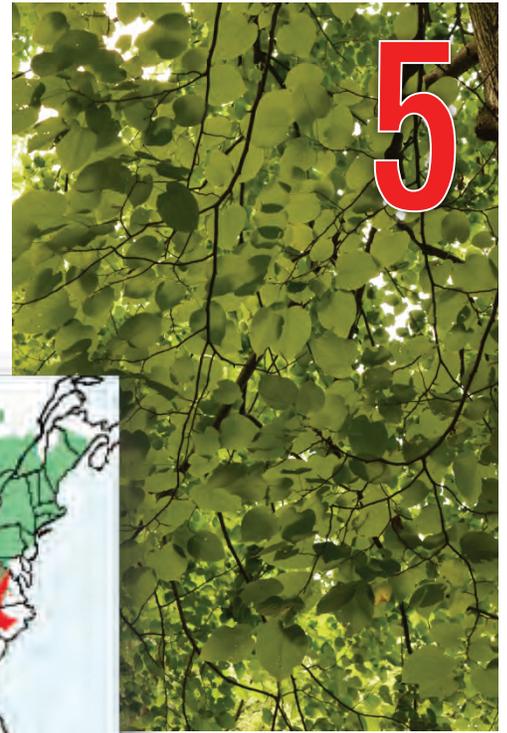


The flowers are pale yellow, and hang below a long, gracefully curving leafy wing.



The lightweight wood from this tree is popular in carving. The fibrous inner bark was used to weave mats, rope and baskets.

Leaves are simple, 5 to 6 inches long, with serrated margins, and a very noticeable unequal base.



Fruits are round and covered with gray-brown hairs. They hang in a cluster with a curving, leafy bract acting as a wing on top.



Black Walnut

Juglans nigra

Black walnut trees are popular for their use in wood furniture and flooring, and for their walnuts. Walnuts are an important food source for squirrels in the winter. Walnuts grow 2 – 2 ½ inches across, and are incased in a thick, green husk that dries as the nut matures inside.



The leaves are compound, growing 12 to 24 inches long with 10 to 24 leaflets and a poorly formed or missing terminal leaflet.



Black walnuts produce a toxin called juglone, which can stop other plant species from growing nearby.



The bark is dark brown, ridged and furrowed with a rough diamond pattern. Mature trees can reach up to 100 feet in height.

Male flowers are single-stemmed catkins. Female flowers are on short spikes near the twig end, appearing in the late spring.



Box Elder

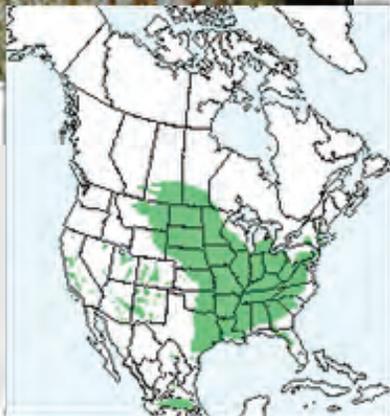
Acer negundo

Box elder is our only native maple with a compound leaf. Found widespread across North America. It is also called ash-leaf maple. Not normally considered a desirable tree since it is short-lived, 50 – 60 years and has soft, brittle weak wood.



Prefers moist soil and can be found growing along lakes and streams.

Leaves grow opposite, as do other maple trees. They are compound with 3 – 5 leaflets, rarely 7. The shape of the leaves does vary. Sometimes called the poison ivy tree because of the leaf configuration.



Yellow-green flowers, in drooping racemes; appear in spring.



Boxelder has paired samaras in long drooping clusters.



Boxelder bugs feed off of the seeds of box elder, and sometimes other maple and ash species.

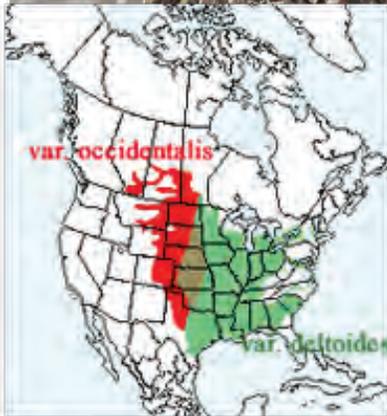


They can form large aggregations in and around homes as they prepare for in the colder winter months.

Eastern Cottonwood

Populus deltoides

The cottonwood is a very fast-growing tree that can reach heights of 150 feet. Tolerant of flooding, erosion and sediment deposited around its roots, it is found growing near riverbanks and along flood plains.



Bark is gray, thick ribbed and deeply furrowed.



3 – 6 inch long triangular shaped leaf with a serrate margin.

These trees are dioecious (male and female are separate). Flowers are in catkins that appear before the leaves.

The tree is named for the fluffy, white seed-bearing “cotton” found on female trees. The seeds disperse with the wind.



Bur Oak

Quercus macrocarpa

Bur oaks provide a thick canopy of shade wherever they grow. In the open they can reach over 100 feet tall, very wide and spreading. The best way to differentiate this oak from other oak species is the shape of its leaves and its large “furry” acorns.



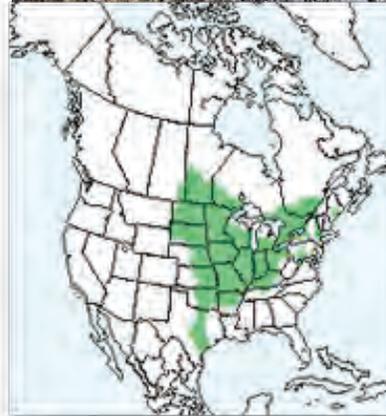
A member of the white oak group, the leaves are 6 – 12 inches long, and vary in the number of lobes. Generally, the ends of the leaves are broader than at the stem. Lobes near the tip resemble a crown.



Bur oaks have the largest acorns growing 1 ½ inches long. The acorns are half enclosed in a deep warty cap with a fringed edge. The acorns mature in one growing season, with heavy acorn crops every 3 – 5 years.



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Bark is ashy gray to brown in color and quite scaly, but noticeably ridged vertically on large trees.

Male flowers are yellow-green, long slender catkins. Female flowers are green tinged with red and appear as single, short spikes, both appear shortly after the leaves.

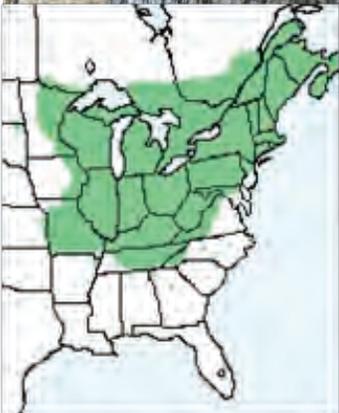


Sugar Maple

Acer saccharum

Although a popular urban, and shade tree with its brilliant fall foliage the sugar maple is sensitive to acid rain, air pollution and salt in the soil. This tree forms a close association with the American beech in a forest habitat.

The sugar maple's spring sap has twice as much sugar as any other maple species. Because of this, it is the only tree that is used for commercial syrup production. It takes approximately 40 gallons of sap to produce 1 gallon of maple syrup.



Besides their sap, maple trees are also important in the timber industry. Older trees develop deeply furrowed bark, with long, thick, irregular curling ridges.



Light yellow-green flowers hang in small clusters in the spring. Two-winged horseshoe-shaped samaras, about 1 inch long, appear in clusters and mature in the fall.

The sugar maple leaf is 3 – 6 inches long with 5 delicately rounded lobes. It is the symbol used in the Canadian flag.



Northern Hackberry

Celtis occidentalis



A small sized tree, reaching up to 60 feet in height. The hackberry has distinctive bark. Smooth and gray when young, it soon develops corky, individual "warts" which later develop into rough corky ridges resembling tire tread.



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Leaves are simple, 2 – 5 inches long with a serrated edge.



Very small light green flowers are produced on stalks from new leaf axils in the spring.



Round ¼ inch berries turn orange-red to dark purple when ripe in the fall. These berries are an important food source for migrating birds.

Trees often suffer from a non-fatal disease called witches'-broom, where dense clusters of small short twigs can be found on the ends of branches (caused by a small insect and a fungus).

White Ash

Fraxinus americana

White ash leaves grow opposite, similar to all other ash species. A compound with 7 leaflets, 8 to 12 inches long. The leaves are essentially hairless, green above and slightly paler below, giving a “white” appearance.

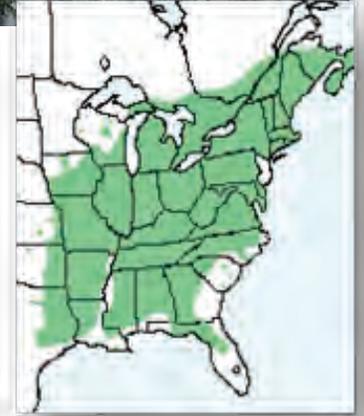


Flowers appear after the leaves unfold. The tree is dioecious (separate male and female).

Flower develops into a one-winged, flattened samara, maturing in fall and dispersing over winter.



Growing up to 80 feet tall, white ash has an ashy gray to brown bark. Interlacing ridges form obvious diamond patterns on the bark.



Emerald ash borer is an invasive species from Asia that feeds on ash species. Damage to the tree occurs due to the serpentine feeding pattern of the larvae. This disrupts the flow of water and nutrients, killing the tree. Adults emerge from D shaped exit holes to breed.

Common Pawpaw

Asimina triloba



Locally known as the Indiana banana tree this small understory tree (30 feet tall) is usually found growing in dense thickets formed by underground root sprouts.

The purple brown flower smells like rotting meat and is pollinated by carrion flies and beetles.



It produces the largest native fruit in North America. Mature fruit can reach 2 inches wide by 10 inches long and is higher in protein than most fruits. At first green, turning yellow then brown as they ripen. The fruit is eaten by both people and wildlife and tastes similar to banana.

The pawpaw's seeds, leaves, twigs and bark contain a natural insecticide. and compounds in its bark and leaves are being tested for cancer therapy.



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Smooth, brown bark spotted with wart-like lenticels, often with light gray patches.

Leaves are large 5 – 11 inches long. They have a distinct green pepper odor when crushed. Pawpaw is the only larval host for the zebra swallowtail butterfly.



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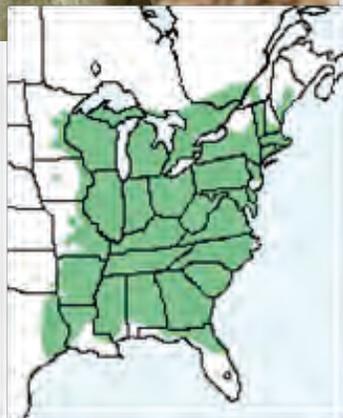
American Hornbeam

Carpinus caroliniana

An easily recognized understory tree, with its smooth unbroken trunk and long, fluted muscle-like ridges. This small tree (15 – 25 feet tall) is also known as blue beech, musclewood, ironwood or water beech.



The name hornbeam has reference to the hardness of the wood – “horn” for toughness and “beam” an Old English name for tree. The wood has been used for making wood tool handles and levers.



Leaves are simple, similar in appearance to the beech. 3 to 5 inches long with a double serrate margin, they turn orange or deep scarlet in fall.



Species is monoecious with hanging male catkins yellow-green, 1 to 2 inches long. Female catkins appear from new branch tips in late spring.



The fruit is a small ribbed nutlet carried on a 3-lobed, leafy bract that is 1 inch long and similar in appearance to a maple leaf. The bracts are clustered on a long 4 – 6 inch hanging stalk.

Eastern Redbud

Cercis canadensis

The redbud is a large shrub or understory tree that can grow up to 30 feet tall, with a short, twisted trunk and spreading branches. The Eastern redbud is very popular due to its showy pink to violet-colored flowers that bloom in clusters all along the stems in early spring.



The heart-shaped leaves, 2 – 6 inches in length, do not appear until after the flowers bloom.



Redbud bark is smooth and brown, later becoming ridged and scaly gray as the tree ages.

The fruit forms flattened, brown pods, similar in appearance to a pea-pod, 2 to 4 inches long.



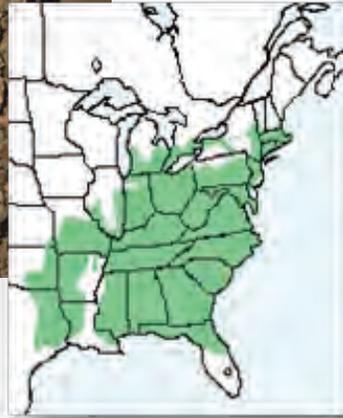
Flowering Dogwood

Cornus florida

Since flowering dogwoods only grow up to 30 feet in height, they are considered an understory trees. This means that they grow underneath taller trees in a forest habitat.



Smooth gray bark of a young tree turns very scaly to blocky as the tree matures.



It can be easy to identify flowering dogwoods by observing its pale white flowers in the spring. The actual flowers of the tree are small and tightly clustered, but surrounded by 4 very large, showy white or pink bracts.



Leaves grow opposite and are a simple oval shape, 3 to 5 inches long, with an entire or slightly wavy margin. Dogwood leaves turn bright red in the autumn.



Fruits mature in the fall and are shiny, red berries in clusters of 3 – 5. Fruit is eaten by many bird species.

Horse-Chestnut

Aesculus hippocastanum

Closely related to the Ohio buckeye, a remedy made from the seeds was once used to treat cough in horses, hence its name. The tree is non-native, introduced from Europe.



The bark is dark brownish gray, with many furrows, scales and rough ridges. The inner bark is orange brown.



Creamy white flowers appear in the spring in a large showy, upright cluster, 5 to 8 inches long.

Fruit is nearly round, with thick, leathery spiny husks. Inside the husks are 1 – 3 smooth, chestnut brown seeds. The seeds of all buckeye species are poisonous causing inflammation, vomiting, stupor, seizures and paralysis.



The palmate compound leaves grow opposite. Horse-chestnut usually has 7 serrate leaflets, 4 – 6 inches long, whereas the native buckeye normally has 5 leaflets.



Northern Catalpa

Catalpa speciosa

The catalpa has been widely planted outside of its normal range as an ornamental tree. Common names for this tree are many and colorful—including cigar tree, Indian bean tree, catawba, and caterpillar tree.



First cultivated in 1754, the wood was used for fence posts and railroad ties because of its resistance to rot and the tree's fast growth rate.



The large leaves grow whorled or opposite and from 5 to 12 inches long.



The catalpa has showy, white tubular flowers with yellow and purple spots on the inside of the flowers. The flowers of the catalpa are visited by hummingbirds, and provide nutrition for bees in early summer. It is the sole host of the catalpa sphinx moth, and caterpillars have been known to defoliate young trees.



Long, 10 – 18 inch bean-like seed pods mature in autumn, but may remain attached overwinter. Each capsule contains numerous flattened seeds with 2-papery, wings.



White Mulberry

Morus alba

White mulberry is a fast, growing short lived tree native to china. It was originally brought here in colonial times to feed silk worms for the silk industry and it naturalized across most of the United States.

The tree is now classified as an invasive species in Indiana. Because white mulberry is able to hybridize with the native red mulberry (*Morus rubra*) there is now serious concern for long-term genetic viability of red mulberry.



White mulberry bark has thick, braiding ridges that are tannish-brown. The yellowish inner bark is exposed between ridges.



White mulberry is quite intolerant of shade, but other than that, it isn't particular about where it grows. It is common in the northern half of Indiana and can be found in many urban settings, fence rows, and abandoned fields. White mulberry is considered a small tree, reaching only 40 feet in height.

In contrast, our native red mulberry is never common, but is found most often in the woods of southern Indiana where it prefers moist, wooded slopes, wood's edges, and shady roadways. It is very tolerant of shade and is usually found as a small, understory tree, but it can attain a height of 60 feet.



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Distinguishing between the two species can be troublesome, but there are several characteristics of each that are fairly consistent.

Leaves occur in three shapes—entire, mitten, and three-lobed. Red mulberry leaves are usually larger (4-10 inches) than white (3-6 inches). Red mulberry has dull, dark green leaves, and its margins are usually finely serrate. White mulberry leaves are bright green, and the margins usually have larger, more rounded teeth.



Flowers are small, green catkins.



Fruit produced mid-June to July and is juicy, sweet, and relished by many birds, mammals, and even humans.

American Elm

Ulmus americana

American elm was once widely used as a street shade tree because of its graceful, arching form and tolerance for stress.



The bark of the American elm is dark, ashy gray with flat-topped ridges separated by diamond-shaped fissures.



In the open, the trunk of an American elm is divided into several large, arching limbs, ending in a maze of graceful branches.



Starting in the 1930s, Dutch elm disease, a fungal wilt carried by the elm bark beetle killed a vast majority of elm trees during this past century.

The leaves are simple, 3 to 5 inches long. The leaf margin is coarse and sharply doubly serrate. The base of the leaf is conspicuously inequilateral.



Flowers are small drooping clusters that appear in early spring before leaf buds open.

The seeds are rounded, flat, wafer-like samaras, 3/8 to 1/2 inch across. They are hairless except for along the margin. Seeds ripen in the spring.



Sweet Gum

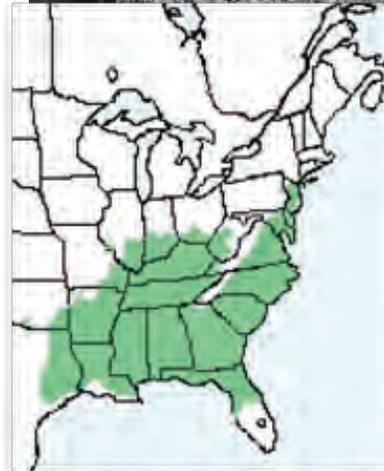
Liquidambar styraciflua

This tree generally grows along the east coast and in southern states, but it can be found in Indiana, and are often planted.

Sweet gum can be easily identified by its star-shaped leaves with five pointed lobes that can grow 4 – 6 inches across. In the fall, the leaves turn bright red. The leaves are fragrant when crushed.



Flowers appear in early to mid-spring. Sweet gum is monoecious, with female flowers borne on a slender stalk, capped with a round head and male flowers borne on an upright raceme.



The bark is gray-brown with irregular furrows and rough rounded ridges.

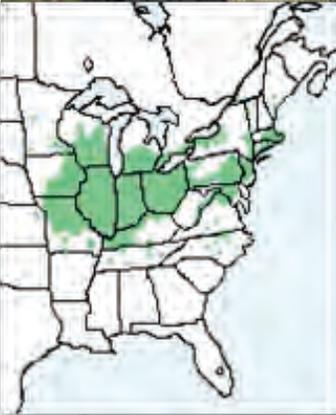


The fruit is easy to identify. Spiny "gumballs" mature in fall. The woody brown spherical seedpod, 1 to 1 1/2 inches in diameter has openings on the surface that release 2 seeds from each capsule.

Swamp White Oak

Quercus bicolor

Swamp white oaks are mostly likely to grow near river beds and moist slopes. This medium sized tree can reach heights of 80 feet, with an irregular crown.



The bark is gray and scaly, developing irregular fissures and ridges as the tree ages.

Leaves are simple, 3 to 7 inches long, dark green and shiny above and pale below. The leaf margin has large irregular blunt teeth.



22

Swamp white oak acorns are 1 inch long, tan, borne single or double on a long stalk. The bowl-shaped cap covers about 1/3 of the nut.



Male flowers are yellow-green long catkins, 2 to 4 inches long. Female flowers are green to red, very small and found in leaf axils, appearing in mid-spring with the leaves.

It is one of the more important white oaks for lumber production. In recent years, the swamp white oak has become a popular landscaping tree, partly due to its relative ease of transplanting.

Being in the white oak group, wildlife such as deer, ducks, and geese, as well as other animals are attracted to this tree when acorns are dropping in the fall.

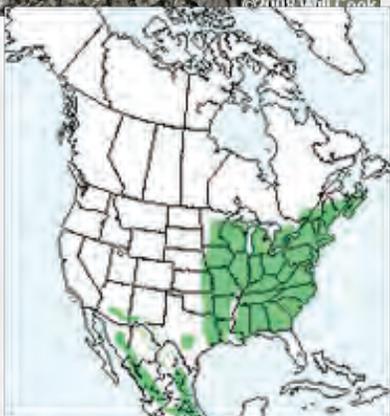
Black Cherry

Prunus serotina

The tallest of our cherries, this tree has been known to grow 100 feet in height in the forest. The wild black cherry can be used for many purposes but it is most prized for its wood for cabinets and furniture.



The bark on young trees is smooth with numerous short, narrow, horizontal lenticels when young. As the tree ages the bark becomes dark red-brown, nearly black, and breaks into irregular scaly plates resembling burnt corn flakes.



The bark has a distinct bitter almond odor and was used as an astringent for cough medicines, expectorants and the treatment of sore throats.



The leaf is simple, 2 – 5 inches long and lance-shaped.

White flowers appear in late spring and hang in clusters 4 to 6 inches long.

The tree produces small purple fruits that have a bitter-sweet taste, but can be used to make jams, jelly, pies, wine, syrup, juice.



Eastern White Oak

Quercus alba

This large, stately, tree is known for its massive canopy. Branches, some 50 feet in length or more, leave the trunk at nearly right angles. The Eastern white oak, named for its light-colored bark, can live for over 200 years.

This tree, along with other oaks and pines were prized for their use in ship building in England and the colonies. The frigate *Constitution* had a gun deck and keel built from white oak.



White the name of this tree comes from the color of its bark; it is rare to see a completely white-barked tree. Usually, the trees are ashy gray in color with irregular scaled bark.



24

White oak acorns mature in one year, with large crops produced every 4 – 10 years. The acorns from this species germinate quickly when they hit the ground. The acorns are a popular food source for deer, blue jays, turkey and squirrels.



The leaf is simple, 4 – 7 inches long with 7 – 10 rounded, finger-like lobes.

Male flowers are yellow-green on slender catkins, 2 – 4 inches long. Female flowers are reddish and appear as single spikes with the leaves.



Shagbark Hickory

Carya ovata

The shagbark hickory gets its name from the distinctive loose strips of bark that peel away from the tree trunk giving it a shaggy appearance. Many of Indiana's solitary bat species make their roosts under the loose bark.



The 7th president of the United States, Andrew Jackson, was nicknamed "Old Hickory" because he was considered to be as tough as a hickory tree.

Shagbark hickories bark is smooth and

gray when the tree is young. Later it becomes broken into long, wide plates attached at the middle and curving away from the trunk.



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Shagbark hickory leaves are pinnately compound, growing 8 – 14 inches long. Usually 5 but sometimes 7 leaflets occur with serrate margins.

Male flowers hang in catkins, 2 – 3 inches long whereas female flowers appear in clusters at the end of branches. Both appear in the spring.



Hickory fruits grow with a very thick green husk that turns brown at maturity in the fall. The inner kernel is 1 ½ to 2 inches in size, sweet and edible for both people and wildlife. Nut is distinctly 4-ribbed.