Trees of the Lilly ARBOR

A Photographic Guide to the Tree Species Occurring in the Lilly ARBOR Riparian Forest Restoration Site, Marion County, Indiana

photographs and text by
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Tree Species Found in the ARBOR:

Planted Species

In 2000, 1332 young trees were planted along the east bank of the White River between 10th Street and New York Street.

Either 86 or 136 individuals of each of twelve species were planted.

Buckeye

Aesculus sp.

Leaves palmate with 5 leaflets.

Opposite branching pattern.

Bark scaly; may be dark or light.

Leaf buds very large.

Buckeye

Aesculus sp.

There are two species of buckeye planted in the ARBOR.

Red Buckeye

Aesculus pavia

Small tree or shrub.

Flowers are red.

Leaves are more narrow.

Ohio Buckeye

Aesculus glabra

Taller tree.

Flowers are creamy whitish.

Leaves are broader.

OAKS

There are two species of oaks planted in the ARBOR.

If only it were so easy to tell them apart!

Swamp White Oak

Quercus bicolor

Chinkapin Oak

Quercus muehlenbergii

Chinkapin Oak

Quercus muehlenbergii

Bark of younger trees is smooth, but bark begins to "flake" as tree gets older.

Leaves tend to be narrower and more sharply toothed; undersides may be hairy; leaf buds sharp.

Leaves tend to grouped in clusters of 5 at branch tips. NOTE: this is NOT a palmate leaf like a buckeye.

Acorns small (3/4"); cup covers 1/3 - 1/2 of nut.

Chinkapin Oak is described as preferring drier soil conditions (e.g. uplands); unclear why it was planted in the ARBOR. Look for smaller, stunted oaks.

Swamp White Oak

Quercus bicolor

Leaves tend to have rounded teeth, but teeth may be sharp; leaf buds not sharp.

Leaves are more sparsely toothed; underside whitish; never hairy underneath.

Leaves are more sparsely toothed.

Bark has flaky appearance.

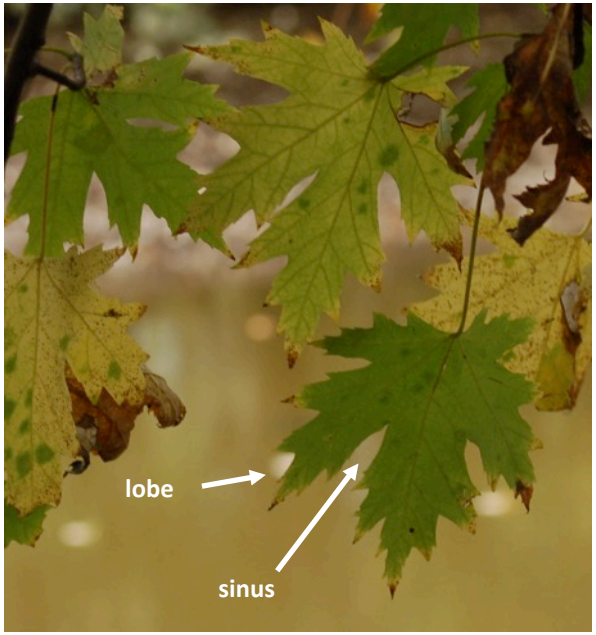
Acorn 1”, cup fringed, covers ½ nut.

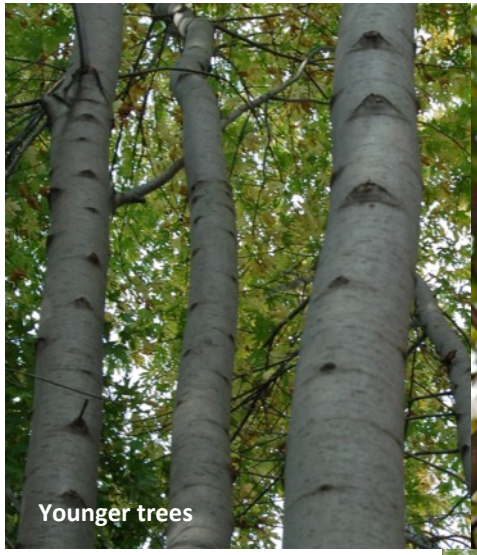
Beaver feed on Swamp White Oak.

Swamp White Oak, as “swamp” would imply, prefers wetter soil conditions. It is a larger tree than a Chinkapin Oak.

Silver Maple

Acer saccharinum





Bark smooth, grey in young trees.

Bark develops furrows that become flaking ridges in older trees.

Leaves palmate, 5-lobed, sharply toothed, deep sinuses V-notched; undersides whitish; leaves have a "lacey" look; lacks good fall color.

Flowers yellowish; blooms early (March).

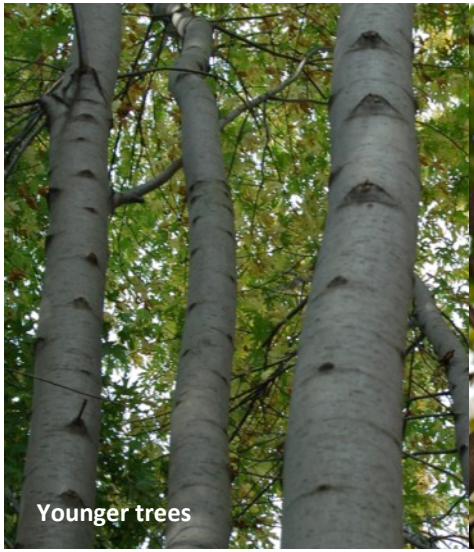
Leaf buds with distinct odor.

Prior to leaf-out, it is very difficult to tell Silver Maples and Red Maples apart. The two species hybridize.

Silver Maple (FACW) handles water stress better than Red Maple (FAC).

Red Maple

Acer rubrum



Bark is like that of Silver Maples: smooth, grey in young trees and developing furrows that become flaking ridges in older trees.

Red Maple will multi-trunk, but typically not to the same degree that Silver Maple shows.

Leaves variable: palmate, 3-5 lobed, sharply toothed, sinuses V-notched (but not as deep as those of Silver Maples).

Leaf stalks (pedicels) red.

Leaf buds lack odor.

Often has brilliant fall color.

Flowers reddish; blooms early (March) – but slightly later than Silver Maple.

Prior to leaf-out, it is very difficult to tell Silver Maples and Red Maples apart. The two species hybridize.

Honey Locust

Gleditsia triacanthos

Leaves doubly pinnately compound.

Branches and trunks usually display thorns; thornless variants occur.

Seed pods large, reddish black.

Trunk lenticels distinct.

Hawthorn

Crataegus sp.

Smaller trees.

Leaves variable: toothed or lobed; serrated edge.

Branches with long, fine thorns.

Bark smooth, grey when young, becoming cracked and flaking in older trees.

Flowers in spring; 5-petaled flower (usually white) typical of members of the Rose Family.

Bright red fruit in autumn.

Hackberry

Celtis occidentalis


Older tree


Younger tree


Very young tree

Hackberries have distinctive "warty" bark.

Bark of younger trees is smooth, and gradually takes on the distinctive warty appearance as the tree ages.

Leaves toothed; one side (at the petiole) higher than the other, giving the leaf a "shrug shouldered" appearance.

Eastern Cottonwood

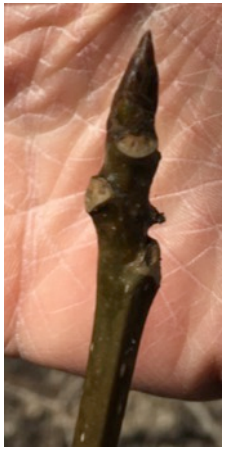
Populus deltoides

Bark of young trees relatively smooth, greenish-grey; bark becomes deeply ridged and furrowed with age.

Leaves triangular, flat at pedicel; toothed.

Terminal leaf bud large, sharply pointed.

Younger branches with long grooves below small lateral buds.



Green Ash

Fraxinus pennsylvanica

Leaves pinnate, compound.

Leaves ~ 9” long; 5-9 leaflets.

Bark of young trees is smooth; bark of older trees develops distinct ridges and furrows.

Opposite branching pattern.

Eaten by beaver.

Weeping Willow

Salix babylonica

Black Willow

Salix nigra

Black Willows were supposed to be planted. The nursery supplied Weeping Willows instead.

Leaf-bearing branches flexible; “weeping” habit distinguishes Weeping Willow from Black Willow.

Massive trees.

Tends to branch low; branches massive; twisting growth form.

Bark deeply furrowed.

Leaves linear lanceolate (long, narrow, and pointed), finely toothed.

American Sycamore

Plantanus occidentalis

Leaves large (~7”); 3-5 lobed, toothed.

Distinctive white-and-brown mottled bark.

Bark light brown in color, scaled, flaking to reveal white under bark; the higher up the trunk, the more white under bark shows.

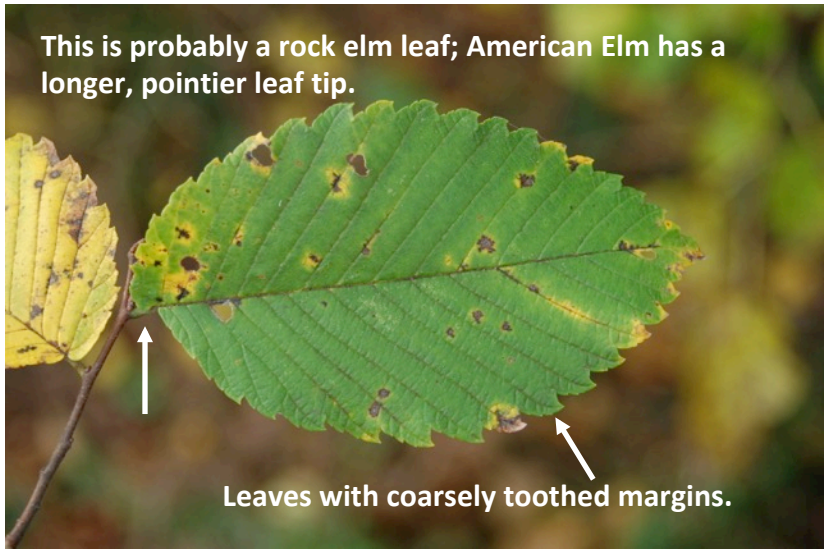
Tree Species Found in the ARBOR:

Recruiting Species

Over the intervening decades, other tree species have become established at the site.

American Elm

Ulmus americana



Leaves entire, up to 5” long, may have uneven leaf base.

Bark of older trees becomes thick and layered.

Bark brown, deeply furrowed/ridged in older trees.

Bark may scale, with fallen scales revealing white patches.

If branches have corky wings, it is probably a Rock Elm (*U. thomasii*).

Slippery Elm (*U. rubra*) is also found in the ARBOR.

Leaf with 3 leaflets.

Resembles Poison Ivy leaves.

Older tree

Bark a brown-grey color.

Not deeply grooved.

Box Elder

Ash-leaf Maple

Acer negundo

Young twigs and stems are green.

Opposite branching pattern.

Seeds are winged samaras (= “helicopters”).

Younger tree

Bark grey with distinct brown lenticels.

Callery Pear

Pyrus calleryana

Early bloomer; flowers before trees have leafed out.

Leaves entire, finely toothed.

New branchlets can be almost thorn-like.

Catalpa

***Catalpa* sp.**

Heart-shaped leaves are VERY large (~8”).

Leaves entire.

Bark furrowed, but furrows are not deep.

Long (~ 10”), cigar-shaped seed pods.

Dogwood

***Cornus* sp.**

Smaller, understory trees.

Leaves entire (= smooth margin), oval, and pointed at the tip.

Opposite branching pattern.

Young branches reddish in some species.

Golden Rain-Tree

Koelreuteria paniculata

Smaller trees.

Bark greyish with orange-brown furrows.

Brilliant autumn color.

Leaves pinnately compound, ~ 12” long.

Each leaf composed of 7-17 leaflets.

Leaflets coarsely toothed, often divided.

Native to China; an ornamental that escaped cultivation.

Red Mulberry
Morus rubra

White Mulberry
Morus alba

LEAVES

Leaves toothed.

Leaves:
- **entire**
- **lobed on one side**
- **lobed on both sides**

All three kinds of leaves can occur on the same tree.

Red mulberries are native; white mulberries were introduced from China

Red mulberries have red/black fruits.

White mulberries have white/red/black fruits.

The two species are very difficult to distinguish; red mulberry leaves have a very rough, sand-paper texture.

Red Mulberry
Morus rubra

White Mulberry
Morus alba

TRUNKS

The bark of mulberries is variable; often has an orange tone.

Red Mulberry

Morus rubra

White Mulberry

Morus alba

Most mulberry trees in the ARBOR are White Mulberries.

Trunks often split low and intertwine, or multiple seeds germinate close together and the separate trunks twine.

Beaver feed heavily on mulberry in the ARBOR.

Siberian Elm

Ulmus pumila

Leaves small, entire, coarsely toothed.

Leaves frequently show excessive insect damage.

Bark grey-black; smooth with lenticels in younger trees; becoming rough and dark in older trees (orange under-bark may be evident in furrows).

Native to east Asia; an invasive species.