

CFAES OHIO STATE UNIVERSITY EXTENSION

# Native Trees in Ohio Landscapes




 THE OHIO STATE UNIVERSITY  
COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

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## What is 'Native'?

- A native plant is one which occurred within the state before settlement by Europeans.
- An introduced or non-native plant is one that has been brought into the state and become established. Sometimes called 'naturalized'
- An invasive plant is a species that has become a weed pest. One that grows aggressively, spreads, and displaces other plants.



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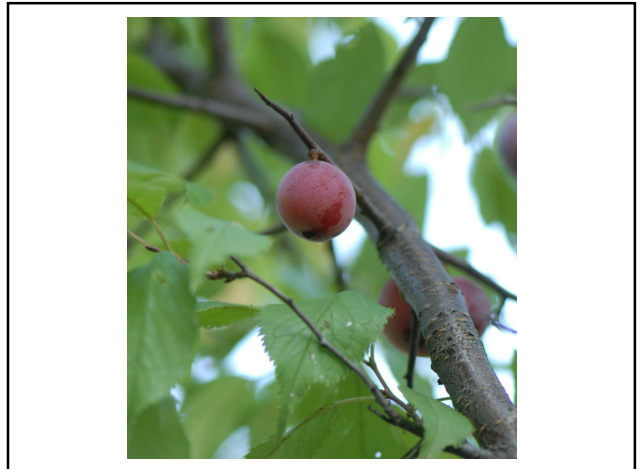
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**Let's look at the oaks:**

How do I know it's an oak?




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**Genus Quercus**

- Large genus – 600 species worldwide
- Part of the Beech Family (Fagaceae)
- 50 oak species are represented in 2/3 of the eastern North American forest cover types and dominate 68% of hardwood forests (191 million acres)
- Subgenera in Ohio
  - *Lepidobalanus* – white oaks
  - *Erythrobalanus* – red oaks




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**The White Oaks**

*Lepidobalanus*


- Inner surface of nut shell smooth
- Nuts are ‘sweet’
- Lobes of leaves rounded
- Acorn matures in 1 year
- Acorn cap scales relatively thickened
- Acorn begins to germinate immediately in fall



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**Bur Oak *Quercus macrocarpa***


- Mature trees are tall (upwards of 80 feet) and very broad if left to open grow (spread of 60 feet plus)
- Good growth rate (2 feet a year)
- Tolerates a wide variety of soils
- Unique leaf shape



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**Bur Oak**

- Deep green color – fall color orange to russet
- Large acorn – sometimes golf ball sized
- Fruits heavy every 3-5 years
- Twigs stout with ‘wings’ of bark



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**Chinkapin Oak** *Quercus muehlenbergii*

- One of the smaller oaks – 60-80 ft. in height
- Leaf finer textured than most oaks – resembles a chestnut leaf
- Fruit is one of the smaller acorns
- Found on dry limestone outcrops and alkaline soils



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**Chinkapin oak**

- Can have red to burnt orange fall color
- Acorns are sometimes eaten raw by hunters
- Sometimes known as 'sweet oak'



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**Swamp White Oak** *Quercus bicolor*

- Mature height in the 70-80 foot range
- Spread can be greater than 40 ft.
- Foliage is dark green above with a white/light underside
- Fall color can range from russet to scarlet



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**Swamp white oak**

- White oak version of pin oak – keeps lower dead limbs
- Fruit is attached with a long stem
- Grows on a wide variety of sites



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### The Red Oaks

*Erythrobalanus*

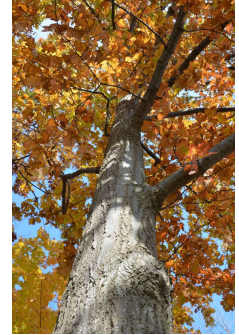
- Inner surface of nut shell woolly
- Nut is bitter
- Acorns take 2 years to mature
- Lobes of leaves tipped by bristle hairs
- Acorns require cold, moist stratification for germination
- Acorn cap scales relatively thin



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### Northern Red Oak – *Quercus rubra*

- 60-80 ft. in height
- Most important and widespread of the northern oaks
- Inhabits mesic, well-drained slopes, coves and drier ridges
- Deep root system



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### Northern Red Oak

- Good acorn crop occurs in 2-5 year intervals
- Seedling growth is fast
- Interesting fall colors – reds to golds



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### Shingle Oak – *Quercus imbricaria*

- Medium sized tree; 50-60 ft. in height
- Leaves not lobed with single bristle hair
- Moist soils along streams or on lower hillsides
- Prone to stem galls
- Red fall color
- Was used to make shingles



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- Leaves 3-8" in length, tipped with one bristle, shiny dark green above
- Acorn cap encloses up to 1/2 of nut – chestnut brown with faint stripes




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### Scarlet Oak *Quercus coccinea*

- Fast growing large tree up to 120'
- Usually retains dead branches
- Found in poor soils in mixed forests, especially on upland ridges
- Red fall color
- Leaves 5-9 lobed with wide nearly circular sinuses



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### Scarlet Oak




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**Swamp Chestnut Oak** (*Quercus michauxii*)


- Native to southern Indiana and eastern PA
- Large tree 60-80 ft.
- Also known as basket oak
- Bottomland/stream/swamp habitat
- Excellent for wildlife
- Yellow-gold fall color
- Fast grower
- 3-5 years between large seed crops



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**Genus Carya**


- This group includes 13 different hickories that occur in the U.S. and Canada
- They have sizable taproots which makes them difficult to transplant
- Monoecious
- They traditionally hybridize
- Many are valuable timber and wildlife trees
- As a group they are alternately branched with pinnately compound leaves
- There are two groups True Hickories and Pecan Hickories



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**The Hickories**


- **True Hickories**
  - Leaves 3-9 leaflets (mostly 5-7)
  - Fruit husks are unwinged, occasionally ribbed at the sutures
  - Bud scales overlapping with more than 6 scales
  - Includes shagbark, shellbark, mockernut and pignut



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**The Hickories**

- **Pecan Hickories**
  - Leaves with 5 – 17 leaflets (mostly more than 7); commonly sickle shaped leaflets
  - Fruit husks usually broadly winged at the sutures
  - Bud scales valvate with 4-6 scales
  - Includes pecan and bitternut



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**Bitternut Hickory – *Carya cordiformis***

- A Pecan Hickory
- One of the faster growing of the hickories
- Pinnately compound leaf
- Deep gold fall color
- Fruit thin shelled and bitter
- Usually found on wet bottom land soils



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**Bitternut Hickory**

- One of the smooth barked hickories
- Has sulfur yellow buds
- Grows on a wide variety of soils
- Mature height 60-80 feet
- Monoecious
- 30 yrs. Before produces fruit



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**Shagbark hickory *Carya ovata***

- A True Hickory
- Sensitive to changes in soil fertility
- Intermediate in shade tolerance
- Has 'shaggy' – loose plated bark
- Leaves usually with 5 leaflets



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**Shagbark Hickory**

- Normally produce a long taproot and very little top growth during early development
- Wood is known for its strength, toughness



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### Shagbark vs Shellbark

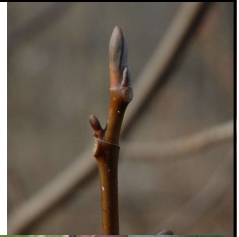
- Shagbark is an upland species
- Nuts are smaller than Shellbark
- Leaves with 5 leaflets
- Nut 1.5" in diameter
- Sometimes referred to as 'king nut' for its large fruits
- Native to bottomland areas where it tolerates some standing water
- Leaves with 7 leaflets
- Nut 1.75" in diameter



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### Tuliptree (*Liriodendron tulipifera*)

- Unusual flat topped leaf
- Can reach heights of 200'
- Even though often called yellow-poplar – it is NOT a poplar
- Flower resembles a magnolia flower



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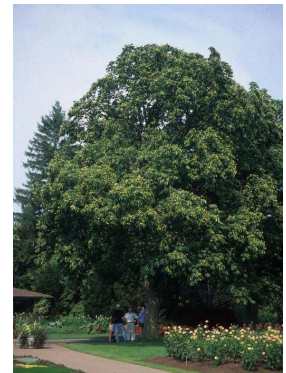
Fruit good identifier in winter – cone like  
 Likes cool moist sites  
 Also known as yellow-poplar, tulip poplar



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### Yellow buckeye – *Aesculus flava*

- Palmately compound leaf – 5-6 leaflets
- Foliage less susceptible to disease issues
- Mature height 60-90 ft. – taller than Ohio
- Tolerates shade
- Flowers in spring are yellowish



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### Yellow buckeye

- Fruit has a smooth husk
- Found naturally on mesic slopes and coves; along rivers and streams
- Wood is used for turnings and carving

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### Ohio Buckeye

- More of a bottomland species
- Leaves slightly smaller than yellow
- Twigs when scratched have a foul odor
- Fruit is spiny

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### Cucumbertree *Magnolia acuminata*

- Doesn't have showy flowers
- Mature height is 80 – 90 feet
- Can have a spread greater than 60 feet
- Fruit has a cucumber shape

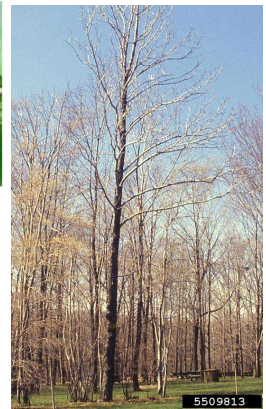
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### Cucumbertree

- Has a pyramidal crown
- Deep wide spreading root system
- Moist fertile soils



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### Kentucky Coffeetree – *Gymnocladus dioica*

- Leaf is bi-pinnately compound
- A medium to large tree (upwards of 100 feet)
- Found natively in valleys and mixed forests
- Imperfect flowers (dioecious)
- Lacks a terminal bud



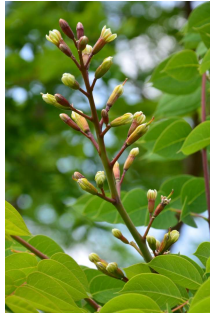
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### Kentucky Coffeetree

- Fruit is a pod – 4-7 inches in length
- Roasted seeds were used as a coffee substitute
- Raw seeds and pulp are poisonous



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### American Beech – *Fagus grandifolia*

- Averages 70 – 80 feet in height
- Dark green leaves with texture
- Fruit is an edible nut
- Found on a wide variety of soils
- Requires more moisture for growth than many other hardwoods



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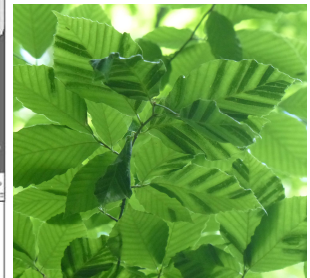
### American Beech

- Tolerates shade
- Shallow root system



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### Beech Leaf Disease




Dark bands between lateral veins of leaves  
Thickened and leathery in texture

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**Blackgum** *Nyssa sylvatica*

- Also known as Black tupelo; sourgum
- Medium sized tree, 50-60 ft. tall
- Fall color is orange-yellow to brilliant red to dark red
- Bark 'blocky'
- Associates with both wet and dry soils
- Fruit excellent for wildlife



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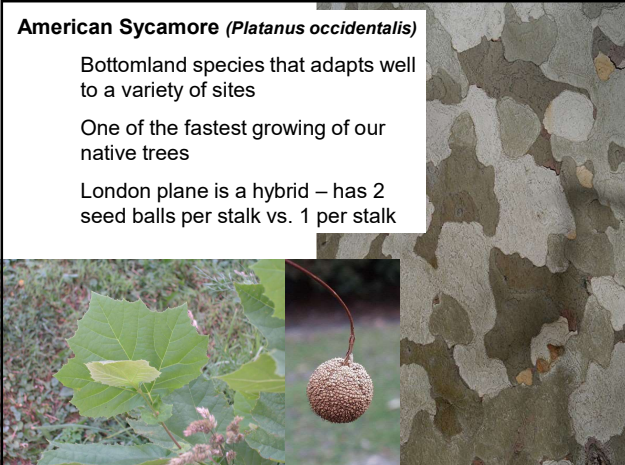
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**American Sycamore** (*Platanus occidentalis*)

Bottomland species that adapts well to a variety of sites

One of the fastest growing of our native trees

London plane is a hybrid – has 2 seed balls per stalk vs. 1 per stalk



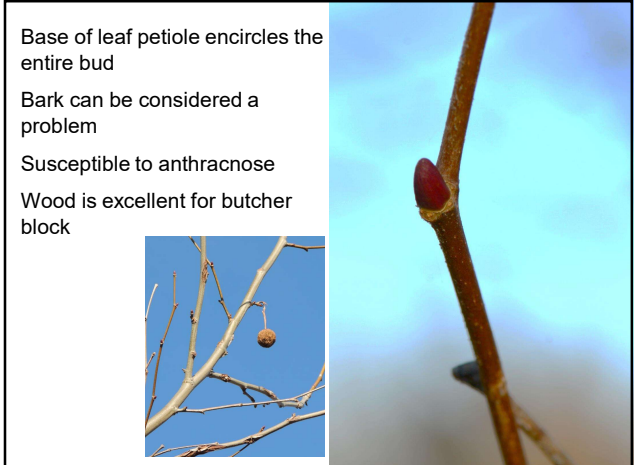
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Base of leaf petiole encircles the entire bud

Bark can be considered a problem

Susceptible to anthracnose

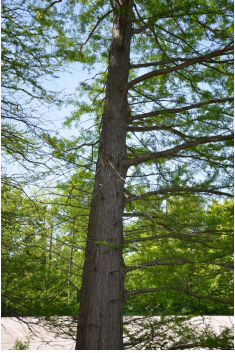
Wood is excellent for butcher block



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**Baldcypress**  
*Taxodium distichum var. distichum*

- A deciduous evergreen
- Fine textured lacy needles
- Can grow in a wide variety of soil types
- Mature height can be 100 – 150 ft.
- Fruit is a cone
- In the right conditions will develop knees






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**Sweetgum (*Liquidambar styraciflua*)**

Also known as redgum  
Bottomland tree  
Moderate to rapid growth rate  
Excellent for wildlife  
Variety of fall colors

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**Sugar Maple (*Acer Saccharum*)**

- A large tree (upwards of 90 feet) that tolerates shade well
- Thrives in moist, well-drained soil
- Usually has great fall color
- Does have some disease issues especially when not planted on the ideal site

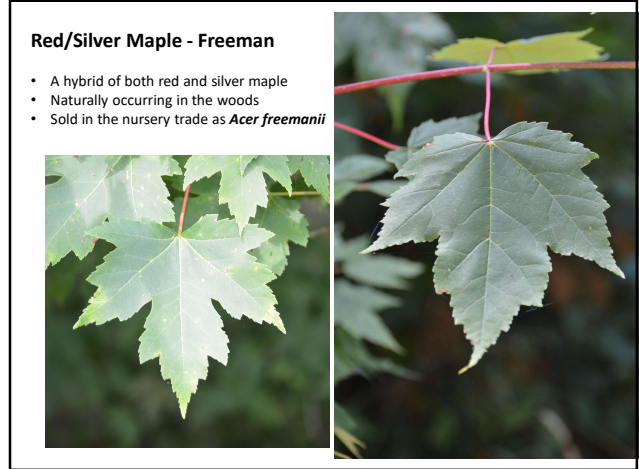



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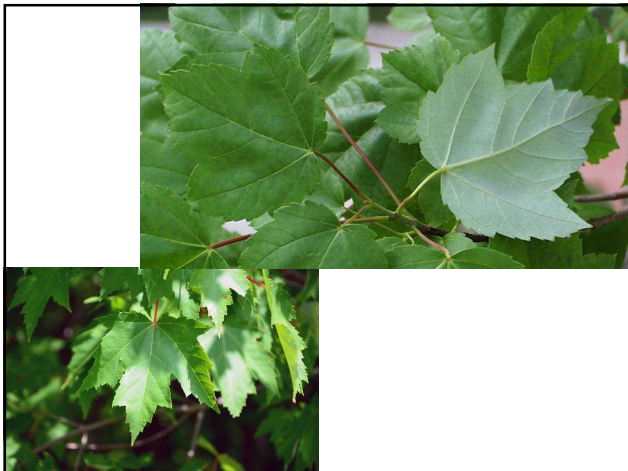




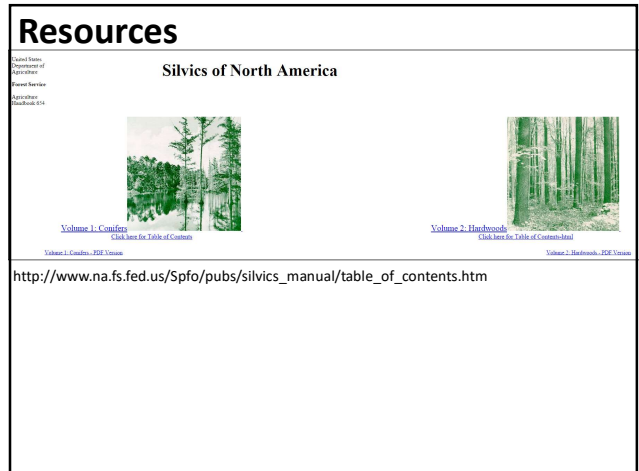
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Book - Science & Math - Biological Sciences

**WOODY PLANTS OF OHIO: TREES, SHRUBS AND WOODY CLIMBERS NATIVE**, Paperback - September 1, 1989  
by **E. LUCY BEAN** (Author)

ISBN-10: 0-8122-0467-9

• Size of format and edition:  
Paperback  
\$33.95 - ~~Price~~  
21 x 9.5 x 0.5 in  
1989, 302 pp.

From the preface: This book has two principal objectives: 1) to give information as to what species occur in Ohio and to show by means of maps the distribution of these species; and 2) to give to amateurs, students, and fieldworkers in the natural sciences a ready means of identifying woody plants at any season of the year. In addition, data on variation within the species are included, particularly where of geographic significance or where not in accord with the usual "taxonal" concepts. It has seemed desirable also to include some general information concerning economic plants, relationships, and broad geographic distribution of genera and families.

**The Woody Plants of Ohio**  
Trees, Shrubs, and Woody Climbers: Native, Naturalized, and Escaped

**E. Lucy Bean**

"Dr. Bean's careful and detailed data, her scientific classification lists, and the exquisite illustration of Elizabeth Sabin combine to make this a very useful publication for both scientist and lay readers." —Charles C. King

"Anyone interested in the flora of the Midwest will welcome this publication. Nonresident and persons interested in ornamental plants will find the volume useful. Every high school biology department in Ohio and adjacent states could profit from a copy of this book. It is the kind of book which may well get students interested in the identification of plants for classes that don't exist!" —Robert E. Shreve

"Not only citizens but plant lovers everywhere will welcome the splendid book prepared by one of America's foremost botanists and plant ecologists. . . . Of immeasurable value and this book's scientific merit claims leadership in the distribution of almost 500 indigenous species." —Journal of Herpetology

The late **E. Lucy Bean** was Professor Emerita of Plant Biology at the University of Cincinnati and author of several books, including *The Horsetail-Jackman: Call-tails to Orchids*, also published by OSU Press.

Ohio State University Press <https://ohiostatepress.org>

1989 302 pp. Hbk.  
\$33.95 paper ISBN-10: 0-8122-0467-9

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**Field Guide to Native Oak Species of Eastern North America**

J. Stein  
D. Burton  
K. Acclevetti

USDA  
FHTE-2003-01  
January 2003

**White oak**  
*Quercus alba* Linnaeus  
eastern white oak,  
gray oak,  
forked-leaf white oak

**GROWTH FORM:** popular and long-lived shade tree, which grows to 100 feet (30.5 m), with a wide-spreading rounded crown and with numerous horizontal branches. **BARK:** light gray, shallow furrows forming scaly ridges or plates. **TWIGS and BUDS:** slender to stout, gray to reddish-green twigs with size-shaped pits, buds are reddish-brown and broadly oval and hairy. **LEAVES:** petiole 1/2 - 1 inch (10-25 mm) in length, above to elliptical-ovate, 4 - 6 inches (101 - 203 mm) long, 2 1/2 - 4 1/4 inches (70 - 112 mm) wide, margin with 5 - 9 lobes that are widest beyond middle, deep sinuses extending a third or more to middle; base acute to cuneate, apex broadly rounded, dull or shiny grayish green above, light green with slight pubescence which becomes smooth beneath as they mature. **ACORN:** annual, 1 - 2 acorns on pedicel up to 1 1/2 inch (12 mm) long, light gray pubescent cap, enclosing 1/4 of the nut, light brown, abutting nut, up to 1 inch (25 mm) long, germinates in the fall after dropping to the ground. **HABITAT:** dry upland slopes to well-drained loam in bottomlands.

<http://www.fs.fed.us/foresthealth/technology/pdfs/fieldguide.pdf>

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**ASH REPLACEMENTS FOR URBAN AND WOODLAND PLANTINGS**

Available from your county OSU Extension office or order online at <http://estore.osu-extension.org/>

White Ash Tree  
White Ash Leaf  
White Ash Bark

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**Bald Cypress (Taxodium distichum)**

<b>Site Selection and General Comments</b>	<ul style="list-style-type: none"> <li>Will grow in soil textures from coarse sand to heavy clay</li> <li>Tolerates alkalinity to moderately alkaline (7.0 soil pH)</li> <li>Tolerates excessively wet soils</li> <li>Toughly tolerant once established</li> <li>Resistant to deer ingests</li> <li>Intermediate to tolerant of shade</li> <li>Dichotomous confire</li> <li>May produce "knees" in excessively wet sites</li> <li>Fast to a one inch to diameter glaucous cone</li> </ul>
<b>Ornamental Features</b>	<ul style="list-style-type: none"> <li>Very fine textured, medium green foliage is unusual except for deciduous conifers</li> <li>Bark-like texture to ash gray thin fibrous bark, viewed by stump as attractive</li> <li>Conical overall shape</li> <li>Broad fall color</li> <li>Drop all of its needles in the fall</li> <li>Relatively few but well-are eaten by a variety of wildlife</li> <li>May provide nesting sites for birds</li> </ul>
<b>Wildlife Value</b>	Specialized market
<b>Woodland Value</b>	Very good timber
<b>Drought Tolerance</b>	Good
<b>Useful to Riparian Ash</b>	Useful as riparian tree for erosion and riparian zones
<b>Commercial Availability</b>	Available in ornamental nursery trade for landscape and wood trees

Bald Cypress

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**Purdue University Press**

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Home > Books > Titles > Native Trees of the Midwest: Identification, Wildlife Values, and Landscaping Use > Details

**Native Trees of the Midwest: Identification, Wildlife Values, and Landscaping Use (Hardback)**

Sally S. Weeks (Author) Harmon F. Weeks, Jr. (Author)  
George E. Parker (Author)

Format: Hardback

ISBN: 9781557522992

Book Description

*Native Trees of the Midwest's* a definitive guide to identifying trees in Indiana and surrounding states, written by three leading forestry experts. Descriptive text explains how to identify every species in any season and color photographs show all important characteristics. Not only does the book allow the user to identify trees and learn of their ecological and distributional attributes, but it also presents an evaluation of each species relative to its potential ornamental value for those interested in landscaping. Since tree species have diverse values to wildlife, an evaluation of wildlife uses is presented with a degree of detail available nowhere else. The revised and expanded second edition contains a chapter on introduced species that have become established and invasive throughout the region. All accounts have been reviewed and modifications made when necessary to reflect changes in taxonomy, habits, or wildlife uses. Keys have been modified to incorporate introduced species.

An interview with the authors is available on YouTube.

About the Author(s):  
Sally S. Weeks  
Sally Spurgeon Weeks was born and grew up on a dairy farm near Warsaw, Indiana. She "found" trees later in life, through her accident while a student at Purdue University. She became her passion. She has written two horticulture books.

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**Ohio Woodland Stewards Program**  
Ohio State University Extension

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**RESOURCES**

Check out the new content being posted every Friday while we pause our in-person classes

[READ MORE >](#)

Promoting stewardship across the woodlands of Ohio through classes, professional workshops and publications.

Due to COVID-19 the university has decided there will be no new events scheduled until at least July 6th. This means no new classes or workshops. In order to keep offering you information on the topics you are interested in we are posting a variety of content under the new **RESOURCES** tab. Look for our "Friday's Escape to the Forest" post each Friday morning to see what's new.

<http://woodlandstewards.osu.edu>

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**Resources**

This page is where you will have access to a variety of resources designed to give landowners some tips on managing and enjoying their outdoor resource. Keep checking back as we build and add content.

**A Tree's Journey: From Forests to Furniture**

In 2017 and 2018 Woodland Stewards offered bus trips through Ohio exploring our forest resources and how they become important products that we use in our households every day. This video **A Tree's Journey: From Forest to Furniture** highlights that process. Click on the image to watch the video.

**Building Ohio State: From Forest to the Renovation of the Thompson Library**

**Building Ohio State** tells the story of the unique connections and history shared between The Ohio State University and Ohio's forests. From its beginnings as a land-grant institution to the renovation of the Thompson Library, the University has

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