

Tree Identification for Beginners

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Studies**



Overview

- 1. Introduction to tree identification**
- 2. Learn how to use a simple ID key**
- 3. Identification of**
 - **Alternate branching deciduous trees**
 - **Evergreen trees**
 - **Opposite branching deciduous trees**
- 4. Q&A**

Overview



Why Bother?

Trees Matter



Wildlife habitat



Forest products



Outdoor recreation

Why Bother?

Trees Work Hard

**Generate
and
preserve
soils**



**Produce
oxygen
and
filter air**



**Filter and
purify water**

**Erosion
control**



Why Bother?

Trees Are In Trouble



Chestnut blight



Dutch elm disease



Dogwood anthracnose



Butternut
canker

Why Bother?

Trees Are In Trouble



Hemlock woolly
adelgid



Asian long-
horned beetle



Beech bark
disease



Emerald ash
borer

Tree-SMART Trade

Fighting the importation of forest pests with policy,
education, and action

#StopForestPests



Follow us @treeSMARTtrade



Learn more at TreeSmartTrade.org

TreeSMART Trade

5 actions to reduce the accidental importation of insects and diseases from international trade:

Switch to pest-free packaging materials for international shipments to the US.

Minimize new pest outbreaks by expanding early and rapid response programs.

Augment international pest prevention programs with key trade partners.

Restrict the importation of live plants in the same genera as native woody plants in the US.

Tighten enforcement of penalties for non-compliant shipments.

[TreeSmartTrade.org](https://www.TreeSmartTrade.org)



Why Bother?

Trees Are Cool!!



Shading and cooling



Endlessly interesting



Good neighbors

Meet The Neighbors



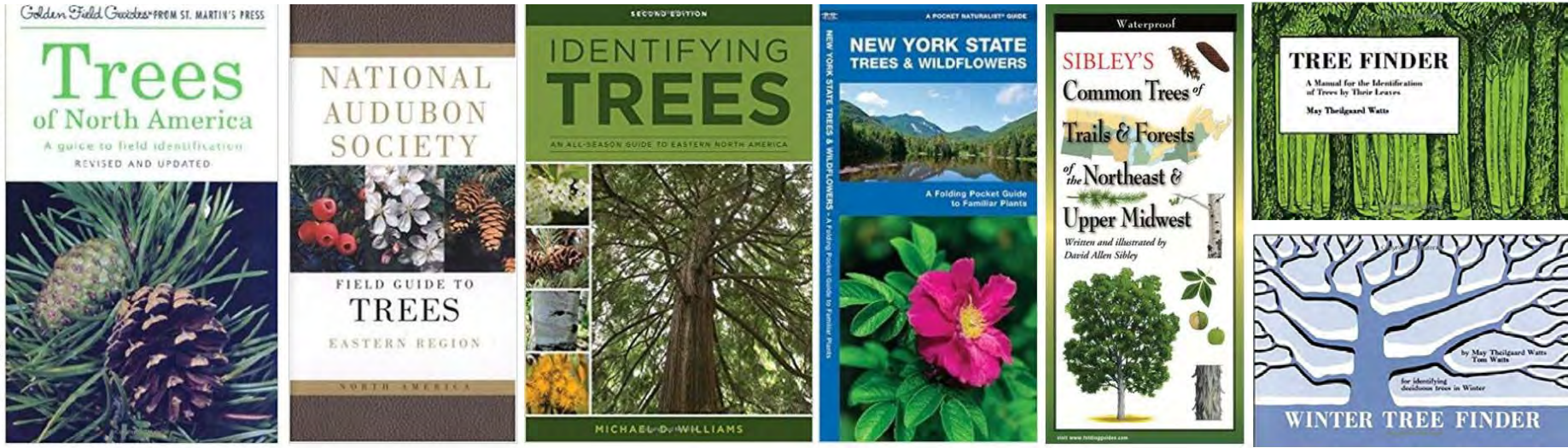
Meet The Neighbors

One at a time...

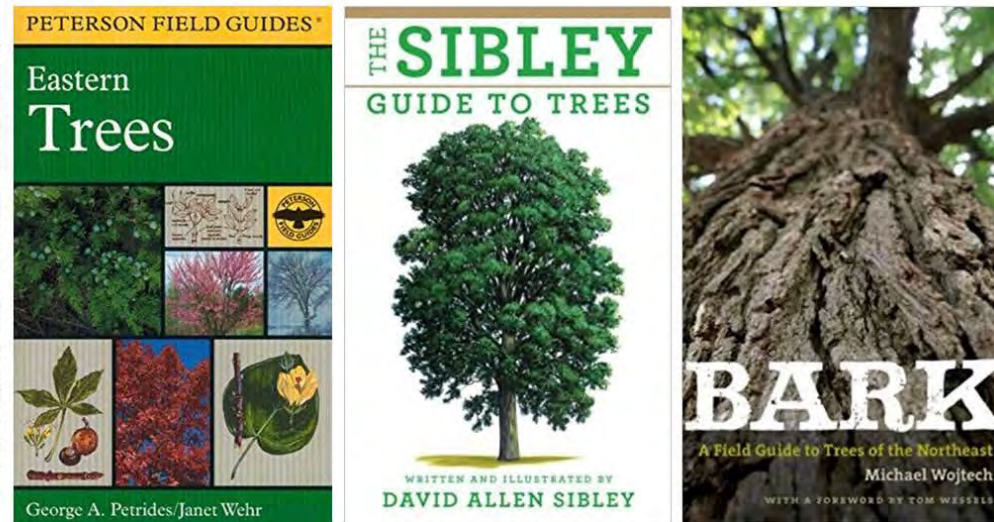


Field Guides

Beginner Tree Guides

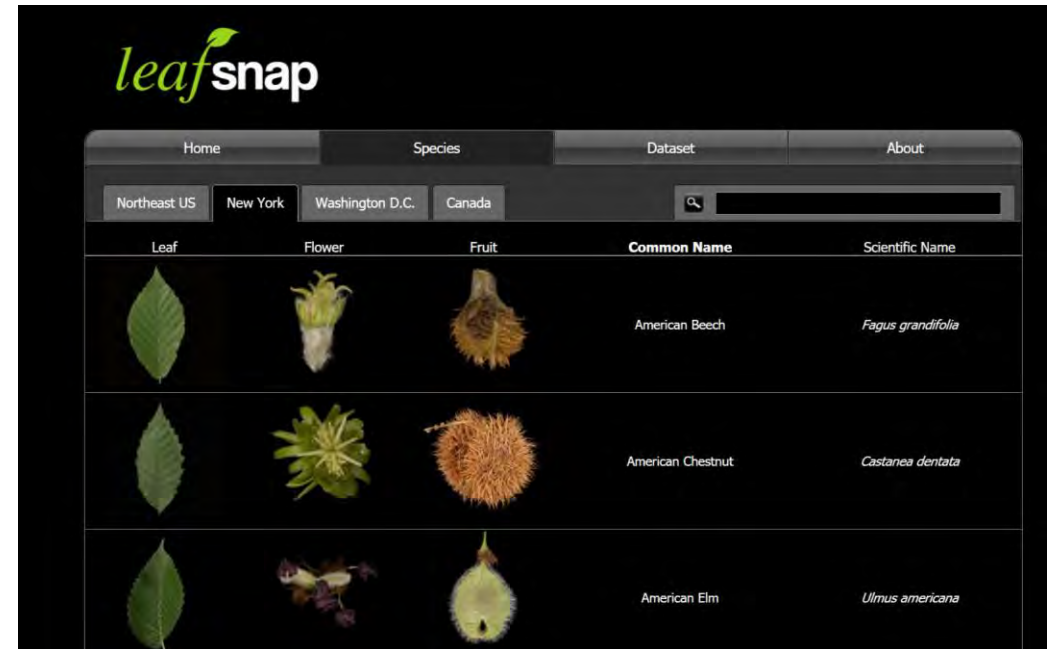
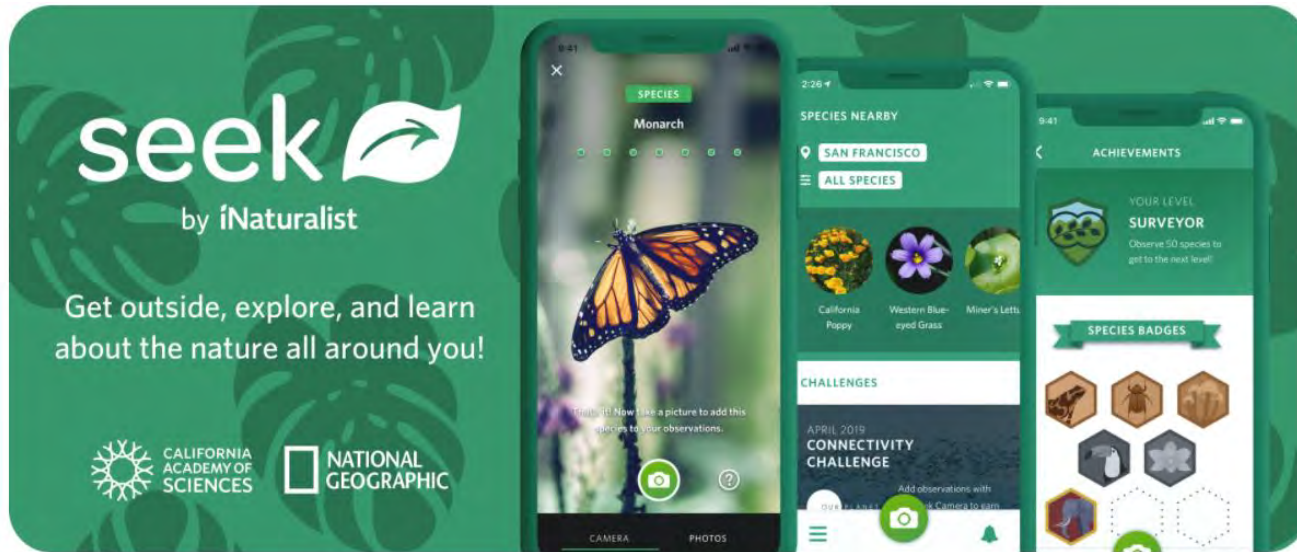


Advanced Tree Guides



Field Guides

There's an app for that!



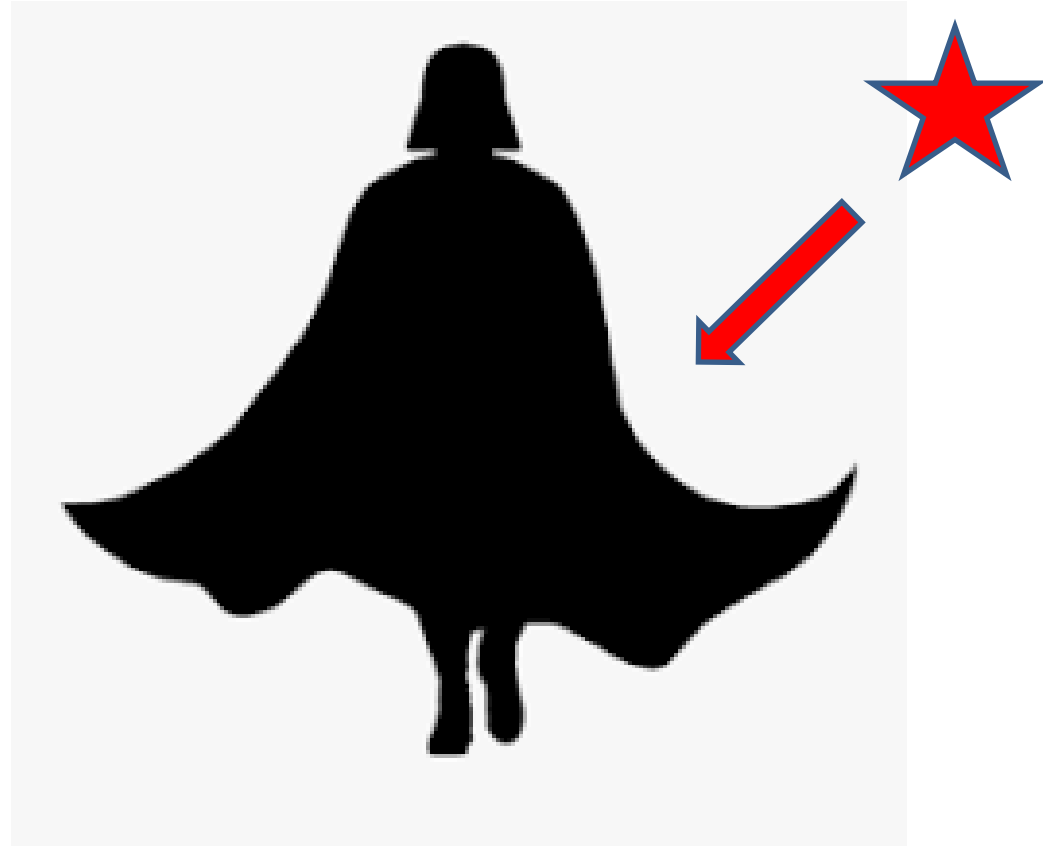
Seasonal Variation



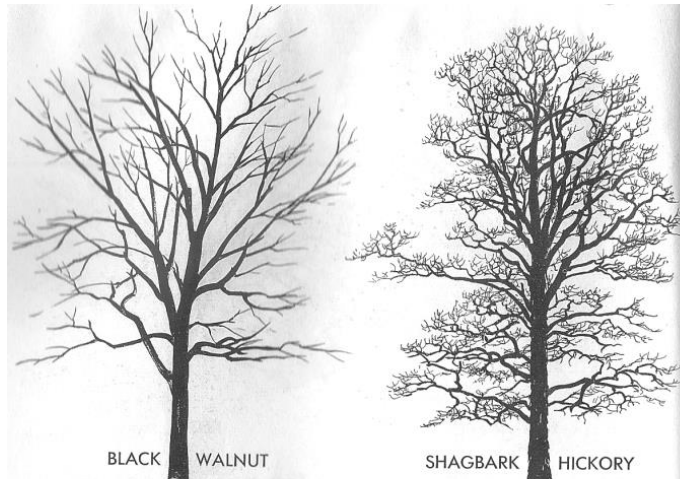
Distinctive Character



Distinctive Character



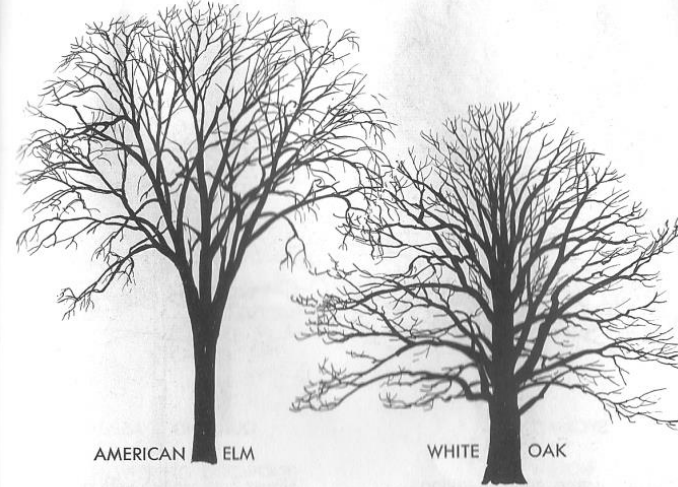
Distinctive Character



BLACK WALNUT
Sharply divided trunk; heavy alternate branches; open spreading head

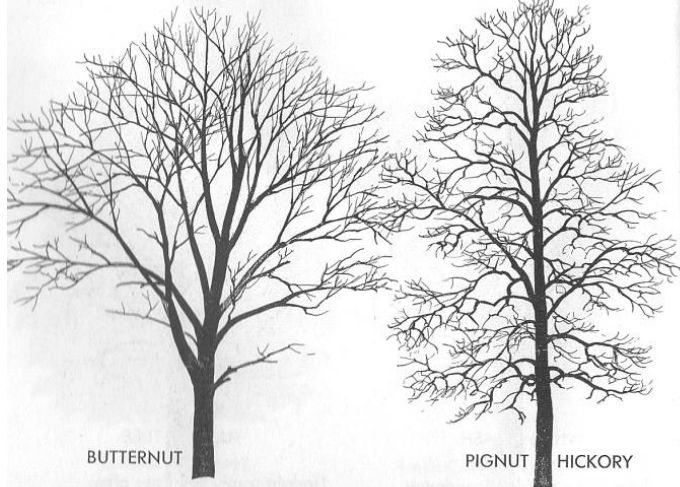


SHAGBARK HICKORY
Oblong; very shaggy bark (may be less twiggy, longer trunked)

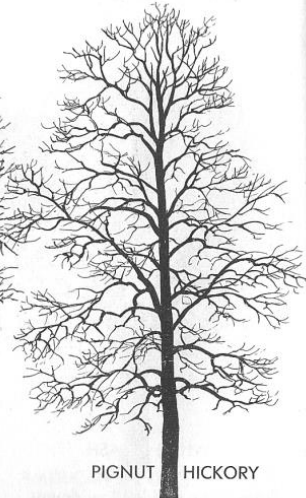


AMERICAN ELM
Vase-shaped; trunk divided into large outspreading branches

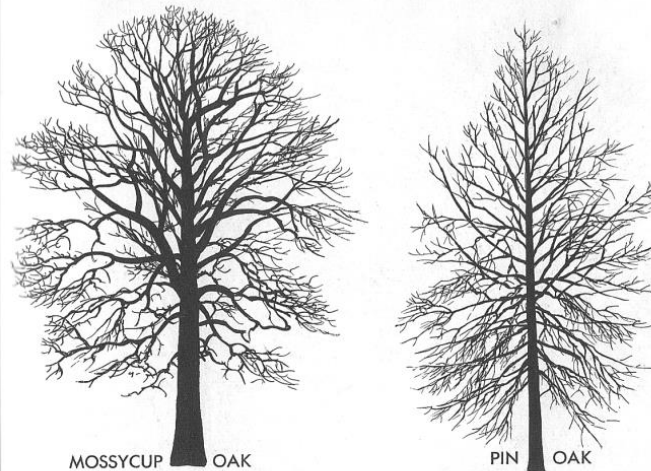
WHITE OAK
Broader than tall; short trunk; branches gnarled



BUTTERNUT
Round-topped or like inverted triangle; Y-like branches



PIGNUT HICKORY
Narrow oblong head; tight bark; contorted branches



MOSSYCUP OAK
Broad round top; spreading; lower limbs often drooping



PIN OAK
Upper branches ascending; lower branches drooping

After Petrides, George
A Field Guide to Trees
and Shrubs. 2nd ed.,
Houghton Mifflin Co.,
Boston. 428pp. 1972.

Distinctive Character



Distinctive Character



Distinctive Character



Using A Key

254 Appendix

A KEY TO THE WHITE OAK GROUP—Continued.

4A. Leaves not evergreen.
 B. Lining of leaves pale, not downy; lobes finger-like. WHITE OAK.
 BB. Lining of leaves pale, downy.
 C. Bark of branches corky-ridged; acorn large, in fringed cup. BUR OAK.
 CC. Bark of branches shed in rough flakes; acorns large, on long stalks. SWAMP WHITE OAK.
 CCC. Bark of branches not corky-ridged, nor scaly.
 D. Acorn medium-sized; leaf margins cut into squarish lobes. POST OAK.
 DD. Acorn large; leaf margins wavy; bark dark brown. CHESTNUT OAK.

A KEY TO THE BLACK OAK GROUP

A. Leaves narrow, willow-like; Southern tree. WILLOW OAK.
 AA. Leaves oval, with deeply-cleft margins.
 B. Acorn cups shallow, broader than high.
 C. Tree pyramidal, twigs with pin-like spurs. PIN OAK.
 CC. Tree spreading; acorns large, in shallow saucers. RED OAK.
 BB. Acorn cups as deep as broad.
 C. Leaves thin, smooth, deeply cut; acorn cup drawn in at the top. SCARLET OAK.
 CC. Leaves leathery, rough, with rusty hairs beneath; acorn cup not drawn in at the top. BLACK OAK.

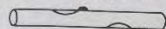


Appendix 255

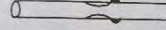


A KEY TO THE ELMS



A. Twigs smooth, not hairy-coated.
 B. Bark of branches not corky-ridged. AMERICAN ELM.
 BB. Bark of branches corky-ridged. WINGED ELM. WAHOO
 AA. Twigs hairy-coated.
 B. Bark of branches corky. CORK ELM. ROCK ELM.
 BB. Bark of branches not corky; buds coarsely hairy. SLIPPERY ELM.



A KEY TO THE MAPLES



A. Leaves simple.
 B. Bloom before the leaves open; seeds ripe in May.
 C. Flowers red; leaves pale beneath, with three triangular lobes. RED MAPLE.
 CC. Flowers greenish; leaves pale beneath, deeply cleft, with long, spiny lobes. SILVER MAPLE.
 BB. Bloom after the leaves open; seeds ripe in autumn.
 C. Leaves wider than long; lobes spiny-tipped.
 D. Lining of leaves, pale; keys joined at acute angle. SUGAR MAPLE.
 DD. Lining of leaves, not pale; keys joined at wide angle. NORWAY MAPLE.
 CC. Leaves circular, lobed; tree prostrate. VINE MAPLE.



If the leaf scars are alternate, that is, if one leaf scar occurs on one side of the twig, with the next one being further along the twig on the other side, like this:  go to  below 


If there are two or more leaf scars opposite each other on the twig, like this:  go to  below 



If the leaf scars are whorled, that is, if there are more than two leaf scars around the twig at the same level, like this:  it is **HARDY CATALPA**
Catalpa speciosa 



If the leaf scars are not whorled, but come in pairs, each one on the opposite side from another, go to  page 44 



If the entire twig is over 1/4 inch thick, go to  next page 


If the entire twig is not over 1/2 inch thick, go to  page 9 

If the buds are whitish and woolly; and the twigs are purplish or greenish; and the leaf scars from opposite sides of the twig meet at their tips, forming a tooth-like point, it is **BOX ELDER**
Acer Negundo 

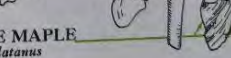
If the buds are not whitish and woolly, go below to  below 

If the twigs are stout, with end buds making a broad, low triangle, smooth, green or partly green, go to  below 



If the buds are longer-pointed, and brown to reddish-brown, go to next page  below 


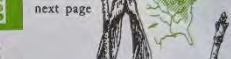
If the buds are marked with green and some red-brown; and the fruits which may still be clinging to the tree are joined in pairs at a wide angle so that they resemble a miniature coat hanger, it is **NORWAY MAPLE**
Acer platanoides 


(In early spring the tree is conspicuous with clusters of yellow-green flowers. At that time one can easily identify this tree by its milky juice.)



If the end buds are big and green, it is **SYCAMORE MAPLE**
Acer Pseudo-Platanus 


(No milky juice.)


48 If the buds are red; and the new growth on the twigs is red, or red-brown, go to  below 

If the buds and the new growth are not red, go to  next page 

If the tree is shrub-like, an understory tree of the forest, with densely-hairy twigs (often with fruits that hang on into the winter), it is **MOUNTAIN MAPLE**
Acer spicatum 


If the tree is not shrub-like, and the flower buds are globular and conspicuous, go to  below 

If the twigs give a rank smell when broken, and the bark on old trunks peels in great shaggy flakes, and the bud scales are pointed, it is **SILVER MAPLE**
Acer saccharinum 

If the younger trunks are smooth, very pale gray, with darker markings, and if the twigs do not have a rank smell when broken, and if the bud scales are rounded, it is **RED MAPLE**
Acer rubrum 

Using A Key

Online Options



Arbor Day Foundation TREES OUR WORK MEMBERSHIP SHOP TAKE ACTION BLOG LIED LODGE ARBOR DAY FARM DONATE

HOME TREES WHAT TREE IS THAT?

What Tree Is That?

Pocket Field Guides

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+ Related Links

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What Tree Is That?

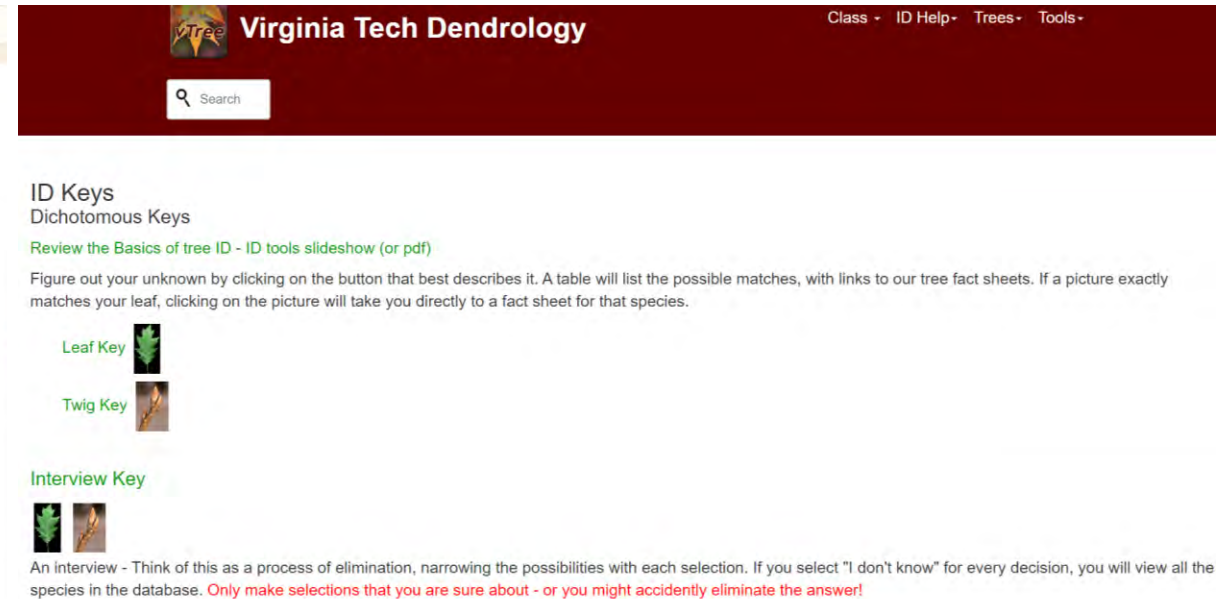
TREE IDENTIFICATION FIELD GUIDE

Our illustrated, step-by-step process makes it easy to identify a tree simply by the kinds of leaves it produces. Begin identifying your tree by choosing the appropriate region below.

Choose Your Region

Western Eastern & Central

www.arborday.org/trees/whatTree/



Virginia Tech Dendrology Class - ID Help - Trees - Tools -

Search

ID Keys

Dichotomous Keys

Review the Basics of tree ID - ID tools slideshow (or pdf)

Figure out your unknown by clicking on the button that best describes it. A table will list the possible matches, with links to our tree fact sheets. If a picture exactly matches your leaf, clicking on the picture will take you directly to a fact sheet for that species.

Leaf Key

Twig Key

Interview Key

An interview - Think of this as a process of elimination, narrowing the possibilities with each selection. If you select "I don't know" for every decision, you will view all the species in the database. **Only make selections that you are sure about - or you might accidentally eliminate the answer!**

<https://dendro.cnre.vt.edu/dendrology/idit.htm>

Using A Key



KEY BASED ON WINTER CHARACTERISTICS

	PAGE
1. Leaves evergreen. (2)	
1a. Leaves deciduous. (11)	
2. Leaves with broad and flat blades. (3)	
2a. Leaves linear, needle-like, scale-like, or awl-like. (5)	
3. Leaves with spiny-toothed margins	AMERICAN HOLLY (<i>Ilex opaca</i>) 269
3a. Leaves with entire margins. (4)	
4. Leaves 5 or more inches long; large terminal flower buds usually present	
.	GREAT LAUREL (<i>Rhododendron maximum</i>) 314
4a. Leaves 4 inches or less in length	MOUNTAIN LAUREL (<i>Kalmia latifolia</i>) 317
5. Leaves needle-like. (6)	
5a. Leaves other than needle-l.ke. (7)	
6. Leaves in bundles of 2 to 5	PINES (<i>Pinus</i>) 49
6a. Leaves scattered, stiff, more or less 4-sided	SPRUCES (<i>Picea</i>) 69

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Tree Identification for Beginners: Deciduous, Alternate



Tree Identification for Beginners: Deciduous, Alternate

Northern Red Oak (*Quercus rubra*)

- Large tree, can grow to over 100' tall.
- Acorns provide food for wildlife.
- Common and widespread, grows mainly in uplands.



Tree Identification for Beginners: Deciduous, Alternate

Northern Red Oak (*Quercus rubra*)

- Twigs short and stout with clusters of buds at the tips.
- Acorns 1", have shallow, tightly scaled cups.



Tree Identification for Beginners: Deciduous, Alternate

Northern Red Oak (*Quercus rubra*)

- Young bark greenish grey with narrow, vertical cracks.
- Older tree has smooth, flat, lighter ridges intersecting with rough furrows. (Looks like ski tracks.) ★



Tree Identification for Beginners: Deciduous, Alternate

Eastern White Oak (*Quercus alba*)

- Large tree, can grow to over 100' tall.
- Acorns provide food for wildlife.
- Common and widespread, grows in rich, moist soils.



Tree Identification for Beginners: Deciduous, Alternate

Eastern White Oak (*Quercus alba*)

- Twigs greenish to gray, with small, blunt buds growing in clusters at the twig tips.
- Acorns $\frac{3}{4}$ "", cup is shallow and stalk is short. Often more slender in shape than red oak acorns.



Tree Identification for Beginners: Deciduous, Alternate

Eastern White Oak (*Quercus alba*)

- Young bark light gray with thin, flaky vertical strips.
- ★ Older bark is light gray with irregular blocks.



Tree Identification for Beginners: Deciduous, Alternate


Shagbark Hickory (*Carya ovata*)

- Grows 70 – 90' tall and can grow to over 100' tall.
- Nuts provide food for wildlife.
- Common on relatively dry, upland slopes.



Tree Identification for Beginners: Deciduous, Alternate

Shagbark Hickory (*Carya ovata*)

- Twigs stout, usually hairless.
- Buds are large and dark, 1/2" long or greater.
- Nuts are 1 3/4" with a  thick green husk.



Tree Identification for Beginners: Deciduous, Alternate

Shagbark Hickory (*Carya ovata*)

- Young bark light gray with vertical lines that develop into cracks.
- Older bark has layers of stiff vertical strips that peel away from the trunk.
★ that peel away from the trunk.



Tree Identification for Beginners: Deciduous, Alternate


American Beech (*Fagus grandifolia*)

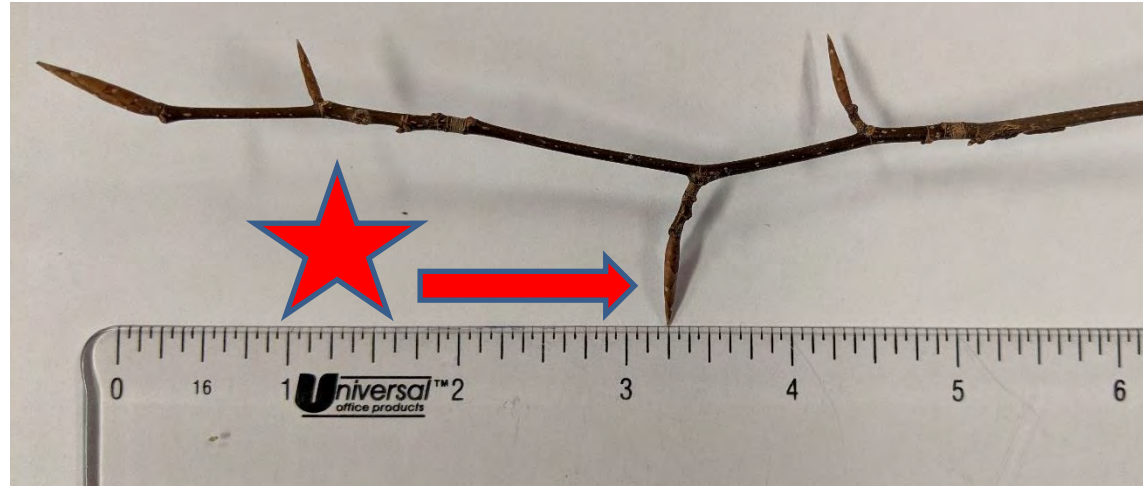
- Grows to 50 – 70' tall and can grow to over 100' tall.
- Common in well-drained uplands.
- Beechnuts can be an important food source for wildlife.



Tree Identification for Beginners: Deciduous, Alternate

American Beech (*Fagus grandifolia*)

- Twigs slender and have a zigzag shape with  pointed buds.
- Often retains leaves through winter.
- Fruit $\frac{3}{4}$ " and contains 1-3 small nuts.



Tree Identification for Beginners: Deciduous, Alternate

American Beech (*Fagus grandifolia*)

- Bark smooth and light gray in young and old trees.
- Commonly afflicted with beech bark disease, which causes blisters, cankers and cracks to form on bark.



Tree Identification for Beginners: Deciduous, Alternate

Black Cherry (*Prunus serotina*)

- Grows to about 60' tall.
- Common and widespread in woods and hedgerows.
- Fruit is an important food source for birds.
- Often infected with black knot disease.



Tree Identification for Beginners: Deciduous, Alternate

Black Cherry (*Prunus serotina*)

- Twigs slender and dark, with small dark buds.
- Fruit is small, less than 1/4" and grow in dangling clusters.



Tree Identification for Beginners: Deciduous, Alternate

Black Cherry (*Prunus serotina*)

- Young bark is smooth, reddish-brown with gray, horizontal lenticels.
- Older bark breaks into scales that curl outward and look like burned potato chips.



Tree Identification for Beginners: Deciduous, Alternate

Birch Bark Cheat Sheet

Paper birch



Gray birch



Black birch



Yellow birch



Tree Identification for Beginners: Deciduous, Alternate

Birch Seeds



Tree Identification for Beginners: Deciduous, Alternate

Paper Birch (White Birch) (*Betula papyrifera*)

- Slender tree, grows to about 70' tall.
- Common in open woods or at wood edges.



Tree Identification for Beginners: Deciduous, Alternate

Paper Birch (White Birch) (*Betula papyrifera*)

- Twigs are stout for a birch, with buds relatively large.
- Seeds borne in cone-like structures that develop from female catkins.



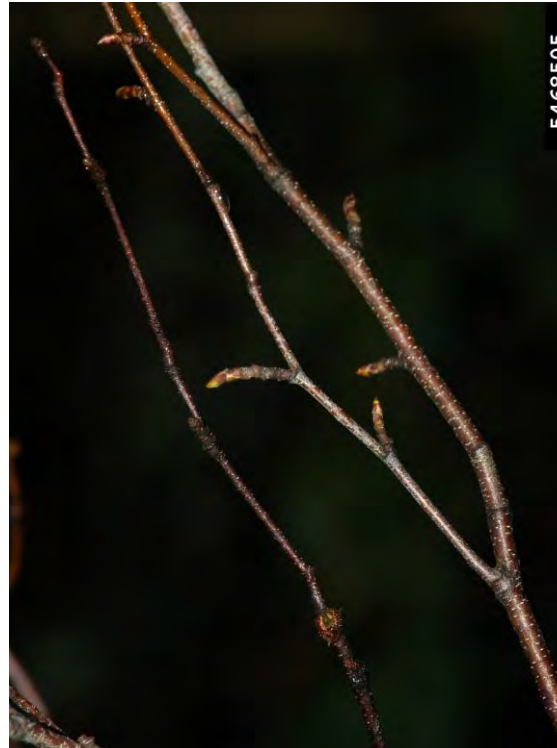
Paul Wray, Iowa State University, Bugwood.org



Tree Identification for Beginners: Deciduous, Alternate

Paper Birch (White Birch) (*Betula papyrifera*)

- Young bark reddish brown with pale horizontal lenticels.
- Older bark white and peeling, with thin, dark, horizontal lenticels.
- ★ Outer layers of bark separate from trunk in curly strips.



Becca MacDonald, Sault College, Bugwood.org



Tree Identification for Beginners: Deciduous, Alternate

Gray Birch (*Betula populifolia*)

- Small, slender tree; often grows with multiple trunks.
- Common pioneer species on disturbed soils.



Tree Identification for Beginners: Deciduous, Alternate


Gray Birch (*Betula populifolia*)

- Twigs slender and rough, with small buds.
- Male flower usually solitary at twig tips.
- Seeds tiny and winged, in cones that persist on the twig into the winter.



Tree Identification for Beginners: Deciduous, Alternate

Gray Birch (*Betula populifolia*)

- Trunks marked by dark  chevron at base of branches.
- Young bark reddish-brown with pale lenticels.
- Older bark grayish white, non-peeling.



Tree Identification for Beginners: Deciduous, Alternate

Black Birch (Sweet Birch) (*Betula lenta*)

- Grows to about 60' tall.
- Common in northern hardwood forests.
- Sap has a wintergreen smell and can be used to make birch beer.



Tree Identification for Beginners: Deciduous, Alternate

Black Birch (Sweet Birch) (*Betula lenta*)

- Twigs dark gray-brown and glossy, buds hairless and pointed.
- Seeds borne in cone-like structures that develop from female catkins.



Tree Identification for Beginners: Deciduous, Alternate

Black Birch (Sweet Birch) (*Betula lenta*)

- Young bark reddish-brown, with light colored horizontal lenticels.
- Older bark dark gray, broken into irregularly shaped plates that curl away from the trunk.



Tree Identification for Beginners: Deciduous, Alternate

American Sycamore (*Platanus occidentalis*)

- Large tree, can grow to over 100' tall.
- Common in wet soils such as streambanks and bottomlands.



Tree Identification for Beginners: Deciduous, Alternate

American Sycamore (*Platanus occidentalis*)

- Twigs are relatively slender, with a zigzag shape. Buds short and stout.
- Fruit contained in ball-shaped structure, which can persist on the tree into the winter.



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Tree Identification for Beginners: Deciduous, Alternate

American Sycamore (*Platanus occidentalis*)

- Young bark green and brown, flakes off to reveal paler green or whitish bark beneath.
- Older bark becomes less scaly, is gray with narrow furrows broken into blocks.
- Topmost branches smooth and whitish.

