



Leaf Key for Common Broadleaf Trees in Maryland

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Tree Guide Key

I. Leaves alternate

A. Leaves simple

- 1. Margins entire Pg. 1
 - a. Leaves oval to elliptic Pg. 1
 - b. Leaves not oval or elliptic Pg. 2
 - i. Leaves lobed Pg. 2
 - ii. Leaves not lobed Pg. 5
 - 2. Margins toothed Pg. 6
 - a. Leaf bases uneven Pg. 6
 - b. Leaf bases even Pg. 7
 - i. Leaves lobed Pg. 7
 - ii. Leaves not lobed Pg. 7
- B. Leaves compound Pg. 10

II. Leaves opposite

A. Leaves simple

- 1. Margins entire Pg. 13
 - a. Leaves lobed Pg. 13
 - b. Leaves not lobed Pg. 13
 - 2. Margins toothed Pg. 14
 - a. Leaves lobed Pg. 14
 - b. Leaves not lobed Pg. 14
- B. Leaves compound Pg. 15



How to Use this Guide

This guide was created as an easy-to-use reference for beginner tree identification. It is not a comprehensive guide. Trees represented in the guide include those that are **native** to Maryland, those that are introduced (**exotic**), and those that are exotic and create ecological problems (**invasive**).

To use this guide, begin with the key on the previous page. Terms used in the key are illustrated on pages x - xii.

Please note that leaves can be highly variable in shape, size, appearance, and color. Leaves selected for this guide are intended to represent commonly found phenotypes. Leaves represented are not shown to scale.

Under each leaf, the following information will be listed:

Common Name
(*Scientific name*)
Native, Exotic or Invasive
• Distinguishing characteristics

Common Identification Terms: Simple Versus Compound

Simple and **compound** refer to whether or not a leaf the leaf is divided. Simple leaves have a single blade attached to a stem known as a *petiole*. Compound leaves have multiple blades known as *leaflets*. To make sure you are looking at a leaf and not a leaflet, look for the *lateral bud* where the petiole meets the twig. All leaves have this trait, but **leaflets do not**.



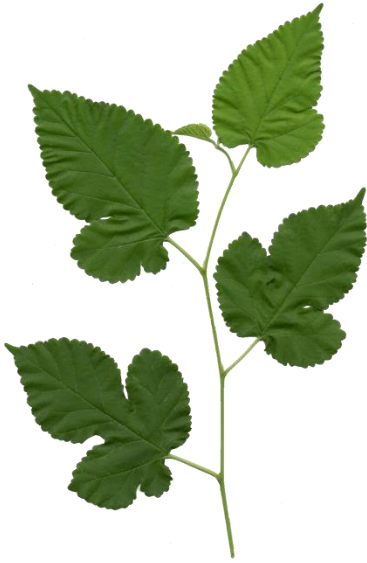
SIMPLE



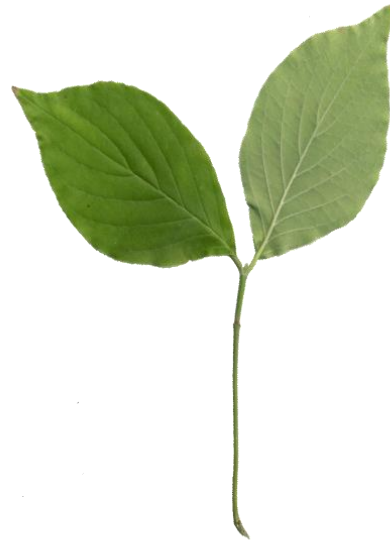
COMPOUND

Alternate Versus Opposite Leaves

Alternate and **opposite** refer to the arrangement of leaves along the twig. Do the leaves appear to zig-zag along the twig, or are they directly across from one another?



ALTERNATE



OPPOSITE

Entire Versus Toothed Leaf Margins

Entire and **toothed** refer to the edge of the leaf. The edge of a leaf is also known as a *margin*. Do the leaf edges seem to zig-zag, or are they smooth?



ENTIRE



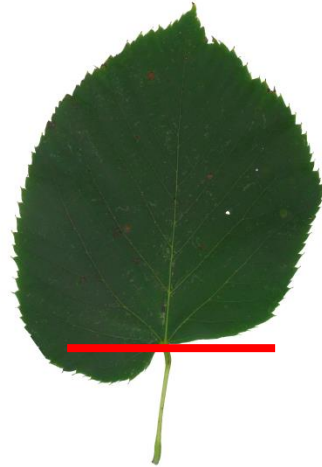
TOOTHED

Even Versus Uneven Leaf Bases

Even and **uneven** refer to the shape of the base of the leaf. Do both sides of the base of the leaf line up with one another; or are they uneven?



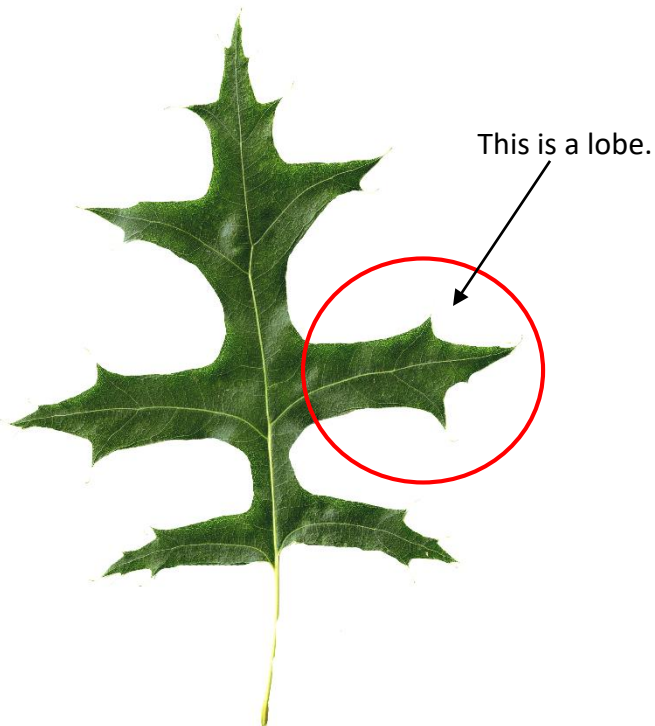
EVEN LEAF BASE



UNEVEN LEAF BASE

Lobed Versus Not Lobed Leaves

Lobed and **not lobed** refer to the shape of the leaf. Does the leaf have sections that jut out, or does it have a consistent leaf edge?



LOBED



NOT LOBED

Alternate, Simple, Entire, Oval - Elliptic



Southern Magnolia
(*Magnolia grandiflora*)

Exotic

- Underside orange and hairy
- Evergreen



Umbrella Magnolia
(*Magnolia tripetala*)

Native

- Leaves 10-24"



Common Pawpaw
(*Asimina triloba*)

Native

- Leaves 6-12"
- Edible fruit



Sweetbay Magnolia
(*Magnolia virginiana*)

Native

- Underside white



Common Persimmon
(*Diospyros virginiana*)

Native

- Bark broken in small squares
- Edible fruit

Alternate, Simple, Entire, Oval – Elliptic; Cont'd



Bradford Pear
(*Pyrus calleryana*)

Invasive

- White flowers with unpleasant smell in spring
- Small, round fruit in fall



Rhododendron sp.
(*Rhododendron sp.*)

Native/Exotic

- Variable leaf shape
- Evergreen



Spicebush
(*Lindera benzoin*)

Native

- Shrub
- Aromatic when crushed
- Red berries in fall



Sassafras
(*Sassafras albidum*)

Native

- Hairy leaves
- Variable leaf shape (see pg. 4)
- Aromatic when crushed



Black Gum
(*Nyssa sylvatica*)

Native

- Dark, shiny leaves
- Underside lighter
- Blocky bark



Alternate, Simple, Entire, Not Oval, Lobed

All leaves on this page have bristle-tips.



Scarlet Oak
(*Quercus coccinea*)

Native

- Twigs reddish-brown
- Buds hairy, pointed
- Tufts of hair on underside
- Inner-bark orangish-pink



Southern Red Oak
(*Quercus falcata*)

Native

- Top lobe elongated
- Leaf base rounded



Blackjack Oak
(*Quercus marilandica*)

Native

- Leaf lobes broad
- Leaf is triangular



Pin Oak
(*Quercus palustris*)

Native

- Deep lobes
- Twigs shiny
- Buds light brown, hairless
- Inner bark pink



Northern Red Oak
(*Quercus rubra*)

Native

- Variable leaf shape
- Leaves never hairy
- Twigs reddish-brown
- Buds hairy, pointed
- Inner bark pink



Black Oak
(*Quercus velutina*)

Native

- Hairy near veins on underside
- Twigs light brown
- Buds tan, oval-shaped, hairy
- Inner bark orange or yellow

Alternate, Simple, Entire, Not Oval, Lobed; Cont'd

All leaves on this page **do not** have bristle-tips.



Chestnut Oak
(*Quercus montana*)

Native

- Shallow lobes



Post Oak
(*Quercus stellata*)

Native

- Big lobes
- Leaf is cross-shaped



White Oak
(*Quercus alba*)

Native

- Deeply lobed
- Leaf shape variable
- Grayish-green on top



Sassafras
(*Sassafras albidum*)

Native

- Hairy leaves
- Leaf shape variable (see pg. 2)
- Aromatic when crushed



Tulip Poplar
(*Liriodendron tulipifera*)

Native

- Has 4 lobes
- Flowers resemble tulips

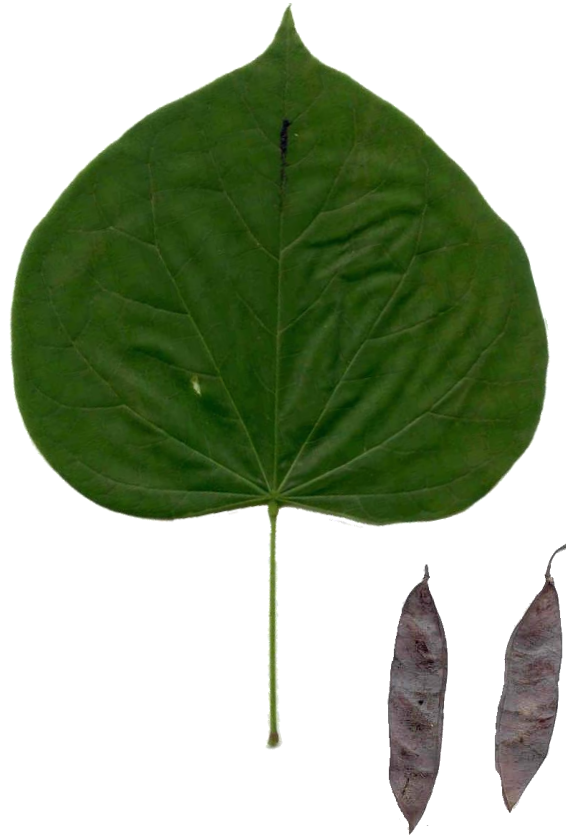
Alternate, Simple, Entire, Not Oval, Not Lobed



Ginkgo
(*Ginkgo biloba*)

Exotic

- Fan-shaped
- Commonly planted



Eastern Redbud
(*Cercis canadensis*)

Native

- Heart-shaped
- Flowers pink-purple, present before leaves
- Has pea-like pods in fall



Willow Oak
(*Quercus phellos*)

Native

- Narrow with bristle-tip

Alternate, Simple, Toothed, Leaf Bases Uneven



American Basswood
(*Tilia americana*)

Native

- Smooth to touch
- Finely toothed
- Small fruits with leafy "wings" in fall



American Elm
(*Ulmus americana*)

Native

- Mostly smooth to touch; Slippery Elm sandpapery with hairy underside
- Tree is vase-shaped
- Commonly planted



Siberian Elm
(*Ulmus pumila*)

Invasive

- Leaves narrow
- Leaves up to 3" in length
- Fruit round, winged



Mulberry sp.
(*Morus sp.*)

Native/Invasive

- Leaf shape variable (see pg. 7,9)
- Fruit resembles blackberries
- Milky sap



Witch-hazel
(*Hamamelis virginiana*)

Native

- Yellow flowers in fall

Alternate, Simple, Toothed, Leaf Bases Even, Lobed



American Sycamore
(*Platanus occidentalis*)

Native

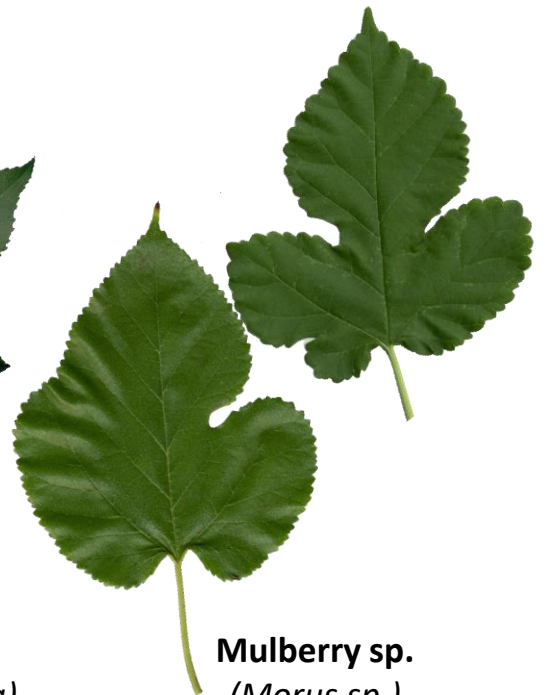
- Leaves large, broad
- Bark gray, white, pale green



Sweetgum
(*Liquidambar styraciflua*)

Native

- Leaves star-shaped;
- Tree produces spiky, ball-shaped seed pods in fall



Mulberry sp.
(*Morus sp.*)

Native/Invasive

- Leaf shape variable (see pg. 6,9)
- Fruit resembles blackberries
- Milky sap

Alternate, Simple, Toothed, Leaf Bases Even, Not Lobed



River Birch
(*Betula nigra*)

Native

- Bark peeling, bright orange or reddish-brown



Hophornbeam
(*Ostrya virginiana*)

Native

- Buds round
- Leaf veins sometimes forked
- Fruit round, winged
- "Ironwood"



American Hornbeam
(*Carpinus caroliniana*)

Native

- Buds square
- Leaf veins never forked
- Fruit winged
- Bark smooth, gray
- "Musclewood"

Alternate, Simple, Toothed, Leaf Bases Even, Not Lobed; Cont'd



American Chestnut
(*Castanea dentata*)

Native

- Leaves long, narrow
- Leaf base tapers
- Feels thin, papery



Chinese Chestnut
(*Castanea mollissima*)

Exotic

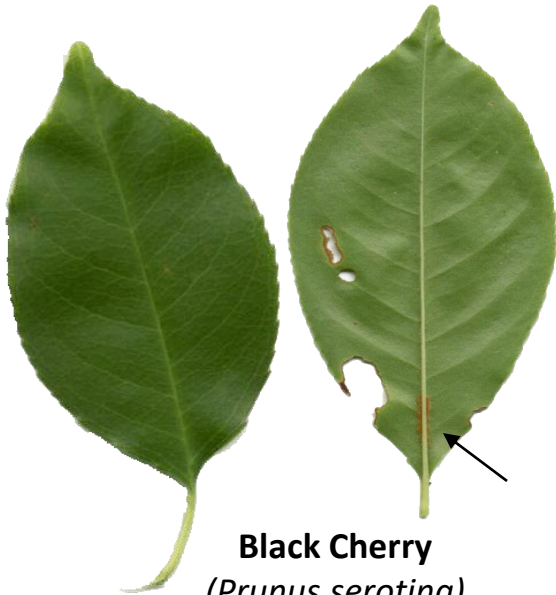
- Leaves oval
- Leaf base rounded
- Feels thick, waxy



American Beech
(*Fagus grandifolia*)

Native

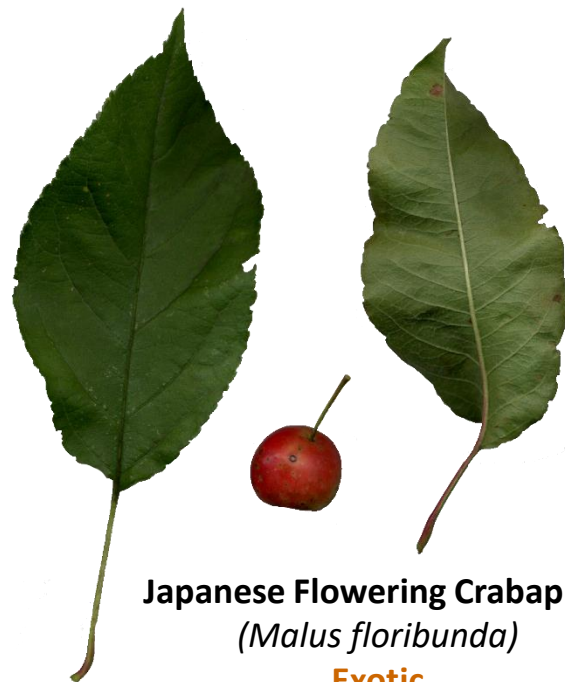
- Bark smooth, gray
- Buds slender, golden, pointed



Black Cherry
(*Prunus serotina*)

Native

- Underside has hair along the main leaf vein
- Two small glands located near leaf base



Japanese Flowering Crabapple
(*Malus floribunda*)

Exotic

- Flower small, white or pink in spring
- Fruit round, red or yellow in fall

Alternate, Simple, Toothed, Leaf Bases Even, Not Lobed Cont.



Hawthorn sp.
(*Crataegus sp.*)

Native

- Flowers small, white with unpleasant smell in spring
- Fruit reddish in fall
- Wild varieties have thorns



American Holly
(*Ilex opaca*)

Native

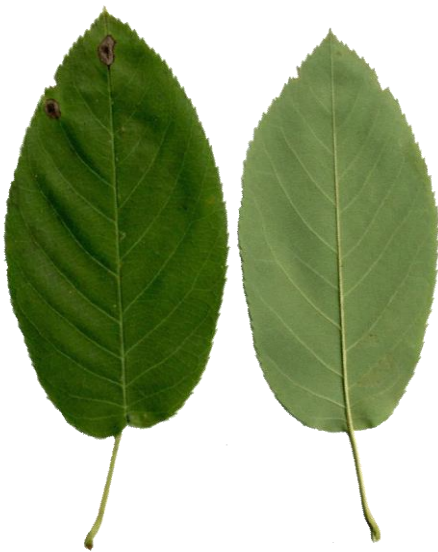
- Leaves dark, shiny, prickly
- Evergreen
- Persistent red berries in winter



Mulberry sp.
(*Morus sp.*)

Native/Invasive

- Leaf shape variable (see pg. 7)
- Fruit resembles blackberries
- Milky sap



Eastern Serviceberry
(*Amelanchier canadensis*)

Native

- White flowers in spring
- Underside lighter



Crape Myrtle
(*Lagerstroemia indica*)

Exotic

- Bark peeling, smooth
- Flower color variable



Willow sp.
Salix sp.

Native/Exotic

- Leaves narrow, elongated



Black Walnut
(Juglans nigra)
Native

- 7-23 leaflets
- Nuts round with green husk, woody shell
- Bark deeply furrowed



Tree of Heaven
(Ailanthus altissima)
Invasive

- Leaflets mostly smooth, few teeth near base
- Seeds have papery wings



Smooth Sumac
(Rhus glabra)
Native

- Leaflets toothed
- Twigs flat-sided, not hairy
- Reddish berries in upright cluster in winter



Staghorn Sumac
(Rhus typhina)
Native

- Leaflets are toothed
- Twigs hairy
- Reddish berries in upright cluster in winter



Winged Sumac
(Rhus copallina)
Native

- Leaflets not toothed
- Twigs hairy
- Leafstalks winged
- Reddish berries in upright cluster in winter



Bitternut Hickory
(*Carya cordiformis*)

Native

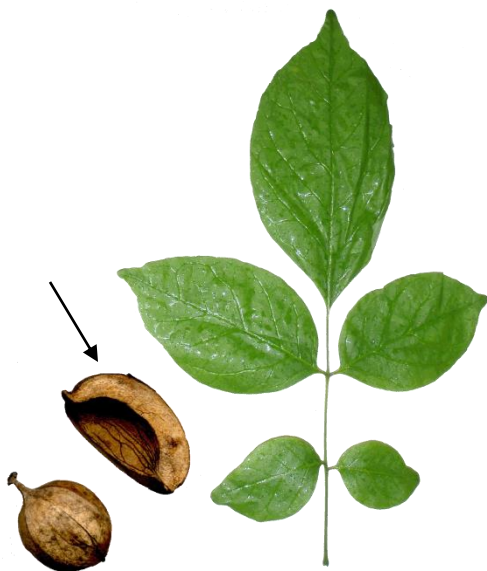
- 7-11 leaflets
- Twigs somewhat hairy
- Buds yellow, powdery



Mockernut Hickory
(*Carya tomentosa*)

Native

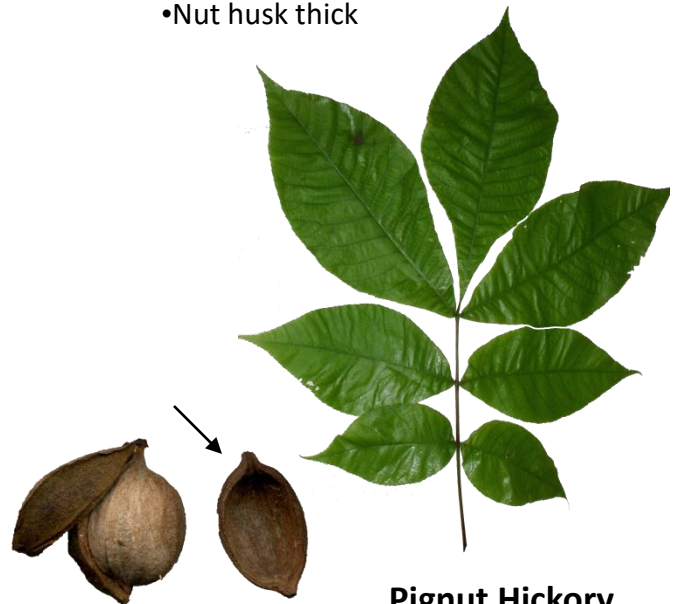
- 7-9 leaflets
- Twigs reddish brown, hairy
- End buds more than ½" long
- Nut husk thick



Shagbark Hickory
(*Carya ovata*)

Native

- 5-7 leaflets
- Twigs reddish-brown, smooth
- End buds more than ½" long
- Bark shaggy
- Nut husk thick



Pignut Hickory
(*Carya glabra*)

Native

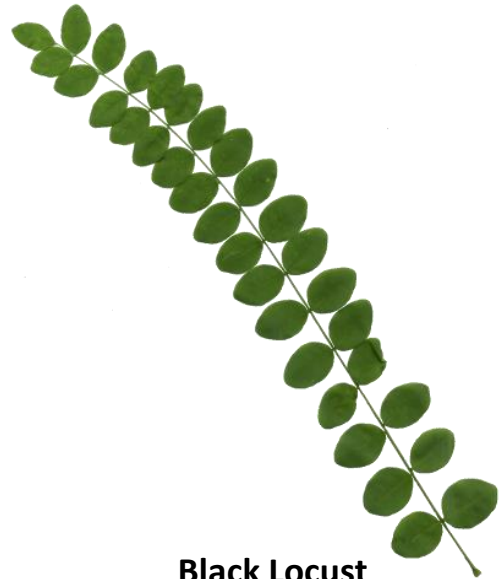
- 5-7 leaflets
- Twigs smooth
- Buds silky
- Nut husk thin



Honey Locust
(*Gleditsia triacanthos*)

Native

- Twigs, branches, and trunk have thorns up to 3" long



Black Locust
(*Robinia pseudoacacia*)

Native

- Twigs, branches, and trunk have thorns up to ½" long



Mimosa/Silk Tree
(*Albizia julibrissin*)

Invasive

- Leaves doubly compound
- Flowers lacy, pink in spring and summer



Golden Rain-tree
(*Koelreuteria paniculata*)

Invasive

- 7-17 leaflets
- Yellow flowers in summer
- Seeds enclosed in lantern-like capsule

Opposite, Simple, Entire, Lobed



Sugar Maple
(*Acer saccharum*)

Native

- 5 lobes
- Twigs and buds brownish
- Flower pale yellow
- Wings of fruit at right angles



Norway Maple
(*Acer platanoides*)

Invasive

- Lobes broad
- Twigs and buds grayish-brown
- Flowers and fruit green
- Milky sap when broken



Opposite, Simple, Entire, Not Lobed



Princess Tree
(*Paulownia tomentosa*)

Invasive

- Leaves hairy, heart-shaped
- Flowers pale purple, blue in spring before leaves



Catalpa sp.
(*Catalpa sp.*)

Exotic

- Leaves heart-shaped
- Flowers white with yellow purple, pink markings in spring
- Long seed pods through winter

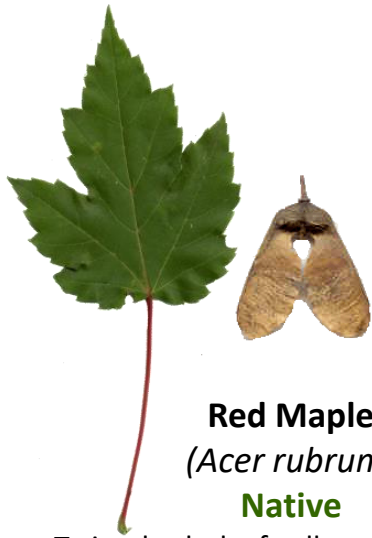


Flowering Dogwood
(*Cornus florida*)

Native

- Leaf veins curve to follow edge of leaf
- Flowers with 4 white bracts
- Red berries in fall

Opposite, Simple, Toothed, Lobed



Red Maple
(*Acer rubrum*)

Native

- Twigs, buds, leafstalks reddish
- Flowers and fruit pink/red



Silver Maple
(*Acer saccharinum*)

Native

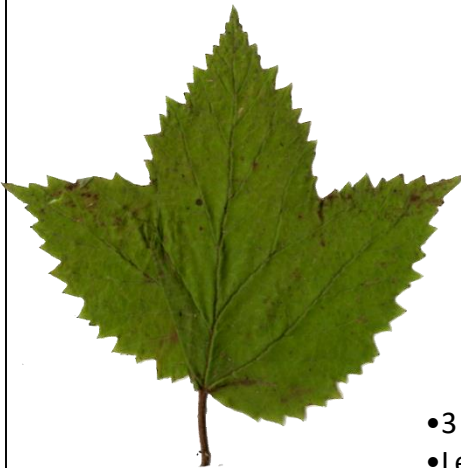
- Twigs and buds brownish
- Flowers green
- Underside silvery-white



Japanese Maple
(*Acer palmatum*)

Invasive

- 5-9 lobes
- Leaves red to purple in fall



Maple-leaved Viburnum
(*Viburnum acerfolium*)

Native

- 3 lobes
- Leaves coarsely-toothed

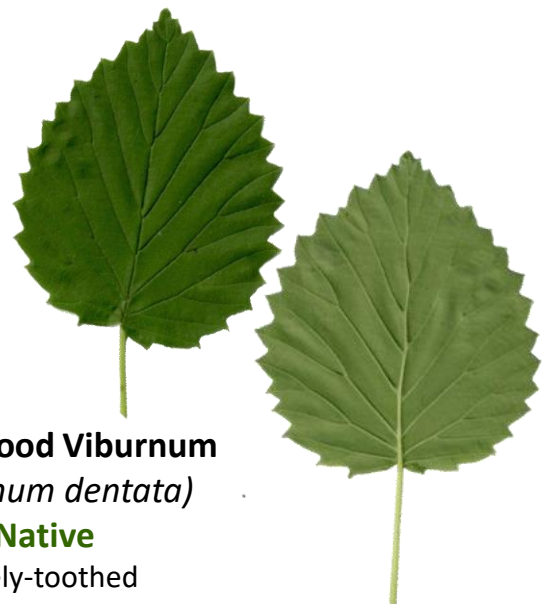
Opposite, Simple, Toothed, Not Lobed



Cherry-leaved Viburnum
(*Viburnum prunifolium*)

Native

- Leaves resemble cherry leaves
- Buds brown, not hairy



Arrowwood Viburnum
(*Viburnum dentata*)

Native

- Leaves coarsely-toothed



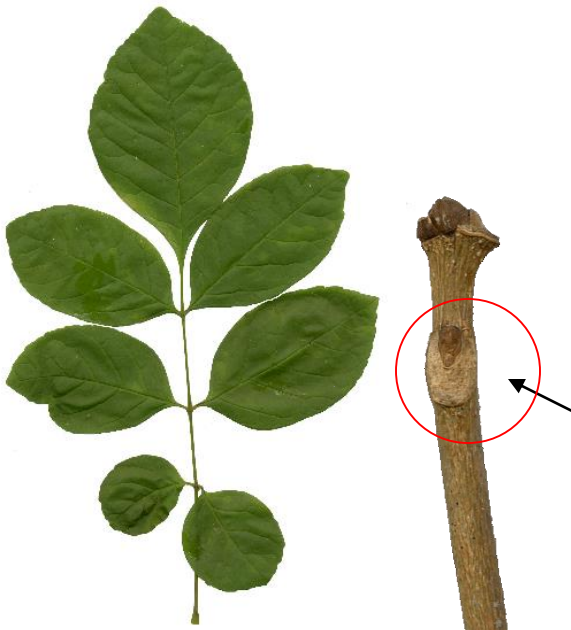
Buckeye sp.
(*Aesculus sp.*)
Native/Exotic

- 5 leaflets arranged in a whorled pattern
- Horse chestnuts (*Aesculus hippocastanum*) have 7-9 leaflets



Box Elder
(*Acer negundo*)
Native

- 3-5 leaflets
- Papery fruit with wings
- Twigs green



White Ash
(*Fraxinus americana*)
Native

- 5-9 leaflets
- Leaf scar is "U" shaped



Green Ash
(*Fraxinus pennsylvanica*)
Native

- 7-9 leaflets
- Leaf scar is semi-circular
- Leaflet stalks have narrow wings

- American Sycamore (*Plantanus occidentalis*) . . Pg. 7
- Ash
 Green (*Fraxinus pennsylvanica*) Pg. 15
 White (*Fraxinus americana*) Pg. 15
- Basswood, American (*Tilia americana*) Pg. 6
- Beech, American (*Fagus grandifolia*) Pg. 8
- Birch, River (*Betula nigra*) Pg. 7
- Black Cherry (*Prunus serotina*) Pg. 8
- Black Gum (*Nyssa sylvatica*) Pg. 2
- Black Walnut (*Juglans nigra*) Pg. 10
- Box Elder (*Acer negundo*) Pg. 15
- Buckeye sp. (*Aesculus sp.*) Pg. 15
- Catalpa sp. (*Catalpa sp.*) Pg. 13
- Chestnut
 American (*Castanea dentata*) Pg. 8
 Chinese (*Castanea mollissima*) Pg. 8
- Crape Myrtle (*Lagerstroemia indica*) Pg. 9
- Eastern Redbud (*Cercis canadensis*) Pg. 5
- Eastern Serviceberry (*Amelanchier canadensis*) Pg. 9
- Elm
 American (*Ulmus americana*) Pg. 6
 Siberian (*Ulmus pumila*) Pg. 6
- Flowering Dogwood (*Cornus florida*) Pg. 13
- Ginkgo (*Ginkgo biloba*) Pg. 5
- Golden Rain-tree (*Koelreuteria paniculata*) . . . Pg. 12
- Hawthorn sp. (*Crataegus sp.*) Pg. 9
- Hickory
 Bitternut (*Carya cordiformis*) Pg. 11
 Mockernut (*Carya tomentosa*) Pg. 11
 Pignut (*Carya glabra*) Pg. 11
 Shagbark (*Carya ovata*) Pg. 11
- Holly, American (*Ilex opaca*) Pg. 9
- Hophornbeam (*Ostrya virginiana*) Pg. 7
- Hornbeam, American (*Carpinus caroliniana*) . . Pg. 7
- Japanese Flow. Crabapple (*Malus floribunda*) Pg. 8
- Locust
 Black (*Robinia pseudoacacia*) Pg. 12
 Honey (*Gleditsia triacanthos*) Pg. 12
- Magnolia
 Southern (*Magnolia grandiflora*) Pg. 1
 Sweetbay (*Magnolia virginiana*) Pg. 1
 Umbrella (*Magnolia tripetala*) Pg. 1
- Maple
 Japanese (*Acer palmatum*) Pg. 14
 Norway (*Acer platanoides*) Pg. 13
 Red (*Acer rubrum*) Pg. 14
 Silver (*Acer saccharinum*) Pg. 14
 Sugar (*Acer saccharum*) Pg. 13
- Mimosa (*Albizia julibrissin*) Pg. 12
- Mulberry sp. (*Morus sp.*) Pgs. 6,7,9
- Oak
 Black (*Quercus velutina*) Pg. 3
 Blackjack (*Quercus marilandica*) Pg. 3
 Chestnut (*Quercus montana*) Pg. 4
 Northern Red (*Quercus rubra*) Pg. 3
 Pin (*Quercus palustris*) Pg. 3
 Post (*Quercus stellata*) Pg. 4
 Scarlet (*Quercus coccinea*) Pg. 3
 Southern Red (*Quercus falcata*) Pg. 3
 . White (*Quercus alba*) Pg. 4
 . Willow (*Quercus phellos*) Pg. 5
 . Pawpaw, Common (*Asimina triloba*) Pg. 1
- Pear, Bradford (*Pyrus calleryana*) Pg. 2
- Persimmon, Common (*Diospyros virginiana*) Pg. 1
- Princess Tree (*Paulownia tomentosa*) Pg. 13
- Rhododendron sp. (*Rhododendron sp.*) Pg. 2
- Sassafras (*Sassafras albidum*) Pgs.2,4
- Spicebush (*Lindera benzoin*) Pg. 2
- Sumac
 Smooth (*Rhus glabra*) Pg. 10
 Staghorn (*Rhus typhina*) Pg. 10
 Winged (*Rhus copallina*) Pg. 10
- Sweetgum (*Liquidambar styraciflua*) Pg. 7
- Tree of Heaven (*Ailanthus altissima*) Pg. 10
- Tulip Poplar (*Liriodendron tulipifera*) Pg. 4
- Viburnum
 Arrowwood (*Viburnum dentata*) Pg. 14
 Cherry-leaved (*Viburnum acerifolium*) . . . Pg. 14
 Maple-leaved (*Viburnum prunifolium*) . . . Pg. 14
- Willow sp. (*Salix sp.*) Pg. 9
- Witch-hazel (*Hamamelis virginiana*) Pg. 6

Images:

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Resources:

Kundt, J.F. & Baker, R.L. (1983). *Leaf Key to Common Trees of Maryland* (Extension Bulletin 238). College Park, MD: Cooperative Extension Service, University of Maryland.

Maryland Plant Atlas webpage.
<http://www.marylandplantatlas.org/index.php>

Petrides, G.A. & Wehr, Janet (1998). *Peterson Field Guides: Eastern Trees*. New York, NY: Houghton Mifflin Company.

Sibley, D.A. (2009). *The Sibley Guide to Trees*. New York, NY: Alfred A. Knopf.

Stein, J., Binion, D. & Acciavatta, R. (2003). *Field Guide to Native Oak Species of Eastern North America* (USDA, USFS, Publication No. FHTET-2003-01). Washington, DC: U.S. Government Printing Office.

Virginia Tech Dendrology webpage. <http://www.dendro.cnre.vt.edu/dendrology/main.htm>

Wojtech, M. (2011). *Bark: A Field Guide to Trees of the Northeast*. Lebanon, NH: University Press of New England.

Larry Hogan, Governor Jeannie Haddaway-Riccio, Secretary
dnr.maryland.gov/wildlife

