



# Identification Key for Coniferous Trees in Maryland



**By:**

Kerry Wixted & Madeline Koenig  
January 2017



# Common Coniferous Tree Guide Key

- 1. Leaves scale-like.....pg 1
- 1. Leaves needles.....2
  
- 2. Leaves in clusters/bundles.....3
- 2. Leaves not in clusters/bundles.....4
  
- 3. Leaves in clusters of 2.....pg 2
- 3. Leaves in clusters of 2-3.....pg 3
- 3. Leaves clusters of 3.....pg 4
- 3. Leaves in clusters of 5.....pg 6
  
- 4. Needles four-sided, stiff.....pg 7
- 4. Needles flat, flexible & blunt.....pg 8



Larry Hogan, *Governor*  
Mark Belton, *Secretary*  
[dnr.maryland.gov/wildlife](http://dnr.maryland.gov/wildlife)



## How To Use This Guide

This guide was created as an easy-to-use reference for beginner identification. It is not a comprehensive guide for all conifers found in Maryland. 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. Read the statements and choose the statement that best matches the specimen you are viewing. Proceed to the next statement that matches the specimen you are viewing. Eventually, the key will lead you to the identification. Terms used in the key are illustrated on pages ii - iii.

Photographs and images selected for this guide are intended to represent commonly found phenotypes. Images are not to scale.

The following information will be listed for each species:

- **Common Name** (*Scientific name*)
- **Leaf Description**
- **Cone Description**
- **Bark Description**
- **Description of Overall Form**

## Common Identification Terms: Scale-like Versus Needle

**Scale-like** and **needle** refer to the shape of the leaf. Are the leaves flat and pressed against the twig? Or, are they narrow and elongated, extending outwards from the twig?



**SCALE**

Most cedars have scale-like leaves



**NEEDLE**

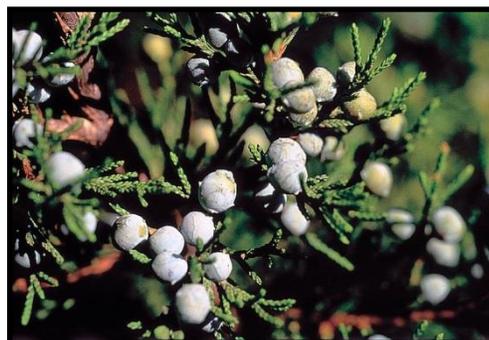
Pines, firs, spruces, and hemlocks typically grow leaves as needles.

## Common Identification Terms: Woody Cones Versus Berry-like Cones

**Cones** can be woody or berry-like. Is the cone woody, or is it fleshy?



**WOODY  
CONE**



**BERRY-LIKE CONE**

## Common Identification Terms: Clustered Versus Not Clustered

**Clustered** and **not clustered** refer to the arrangement of needle-like leaves. Do multiple leaves appear to grow from the same point on the twig? Or, do they appear to grow individually?



**CLUSTERED**

Pines grow needles in clusters, sometimes called bundles or fascicles.



**NOT CLUSTERED**

Spruces, firs, and hemlocks grow needles individually.

## Common Identification Terms: Cone Prickles

**Cone prickles** refer to spines that may be found on the tips of cone scales. Does the cone have prickles? If it does, then are the prickles thin (easy to break) or stout?



**THIN**



**STOUT**

## Scale-like

**Northern White Cedar** (*Thuja occidentalis*); aka Arborvitae; commonly planted\*



### Leaves

- Scale-like & 0.25 inch long
- Scales overlapping
- Leaf sprays flattened



### Cone

- Leathery
- 0.5 inches long
- Oblong & borne upright



### Bark

- Fibrous, red-brown in color & turning gray



### Form

- Small-medium
- Pyramid shaped
- Often has several main trunks

\*Note: Oriental arborvitae (*Platycadus orientalis*) looks similar is often planted too. It has small, fleshy, 0.75 inch long cones.

## Eastern Red Cedar (*Juniperus virginiana*)



### Leaves

- 2 types-  $\frac{1}{16}$  inch scale-like &  $\frac{1}{4}$  inch needle like



### Cone

- Berry-like
- $\frac{1}{4}$  inch in diameter
- Spring- light green
- Fall- blue/glaucous



### Bark

- Red-brown
- Long, fibrous strips



### Form

- Up to 60 feet tall
- Oval or column-like in appearance

## Needles, Clustered, Clusters of 2

### Virginia Pine (*Pinus virginiana*); aka scrub pine



#### Leaves

- 2/fascicle
- 1.5-3 inches long
- Yellow-green
- Twisted



#### Cone

- Woody
- 1.5-2.5 inches long
- Long, thin prickle



#### Bark

- Young- orange-brown & scaly
- Old- thick, scaly plates & cinnamon



#### Form

- Up to 70 feet tall
- Sparse crown
- Often has dead, gray branch stubs

### Red Pine (*Pinus resinosa*); commonly planted



#### Leaves

- 2/fascicle (sometimes 3)
- 4-6 inches long
- Yellow-green



#### Cone

- Woody
- 1.5-3 inches long
- Short prickle



#### Bark

- Young- red-brown & scaly
- Old- ridged & furrowed



#### Form

- Up to 100 feet tall
- Straight trunk
- Oval-open crown

Leaves, Cone & bark by "Steven J. Baskauf <http://bioimages.vanderbilt.edu/>"  
Form by: © Copyright 2016, VT Dept. of Forest Resources and Environ. Conservation

Images by "Steven J. Baskauf <http://bioimages.vanderbilt.edu/>"

## Needles, Clustered, Clusters of 2

### Table-mountain Pine (*Pinus pungens*)



#### Leaves

- 2/fascicle
- 2-3 inches long
- Sharp-tipped



#### Cone

- Woody
- 2-4 inches long
- Often as long as wide
- Prickle stout



#### Bark

- Scaly/ plates
- Dark red-brown or gray in color



#### Form

- Up to 60 feet
- Irregular crown

## Needles, Clustered, Clusters of 2-3

### Short-leaf Pine (*Pinus echinata*)



#### Leaves

- 2-3/fascicle
- 3-5 inches long



#### Cone

- Woody
- 1.5-3 inches long
- Egg-shaped
- Thin prickle



#### Bark

- Young- scaly & dark
- Old- flat & scaly
- Resin pockets



#### Form

- Up to 100 feet tall
- Small, pyramid crown

## Needles, Clustered, Clusters of 3

### Pitch Pine (*Pinus rigida*)\*



#### Leaves

- 3/fascicle
- 2.5-5 inches long
- Yellow-green to green



#### Cone

- Woody
- 2-4 inches long
- Short, stout prickle



#### Bark

- Young- dark & scaly
- Old- red-brown plates w/ furrows



#### Form

- Up to 80 feet tall
- Varies by site
- Often tuft of needles on trunk

*\*Pond and Pitch on the Eastern Shore form a continuous hybrid zone and are rarely separable in the field.*

### Loblolly Pine (*Pinus taeda*); commonly planted



#### Leaves

- 3/fascicle
- 6- 9 inches long
- Yellow-green



#### Cone

- Woody
- 3-6 inches long
- Stout prickle



#### Bark

- Young- red-gray & scaly
- Old- ridged & furrowed



#### Form

- Over 100 feet
- Self prunes
- Straight trunk & oval crown

## Needles, Clustered, Clusters of 3

**Pond Pine** (*Pinus serotina*); found on Eastern Shore\*



### Leaves

- 3/fascicle
- 4-8 inches long

### Cone

- Woody
- 2-3 inches long
- Globular
- Prickle weak or absent

### Bark

- Dark brown
- Broken to irregular scaly plates

### Form

- Up to 70 feet tall
- Often twisted

*\*Pond and Pitch on the Eastern Shore form a continuous hybrid zone and are rarely separable in the field.*



*Pitch pine swamp by Jason Harrison*

## Needles, Clustered, Clusters of 5

### Eastern White Pine (*Pinus strobus*)



#### Leaves

- 5/fascicle
- 3-5 inches long
- Blue-green



#### Cone

- Woody
- 4-7 inches long
- No prickles



#### Bark

- Young- thin & smooth
- Old- thick, reddish brown w/ furrows



#### Form

- Up to 100 feet tall
- Straight trunk w/ conical- wispy crown



White pine by "Steven J. Baskauf <http://bioimages.vanderbilt.edu/>"

## Needles, Not Clustered, 4-sided, Stiff

**Norway Spruce** (*Picea abies*); commonly planted



### Leaves

- 0.5-1 inch long
- Sharp, pointed tip
- Borne on woody peg



### Cone

- Woody
- 4-6 inches long
- Thin, irregularly toothed scales



### Bark

- Red-brown & scaly
- Becomes gray w/ age
- Scales or plates



### Form

- Over 120 feet tall
- Conical shape
- Branches droop

**Blue Spruce** (*Picea pungens*); commonly planted



### Leaves

- 0.75-1.5 inches long
- Stiff & sharp
- Silvery blue to dark green



### Cone

- Woody
- 2-4 inches long
- Cylindrical
- Scales flexible



### Bark

- Gray-red brown
- Young- thin scales
- Old- furrows



### Form

- Up to 80 feet
- Pyramid shaped

## Needles, Not Clustered, Flat, Flexible

### Bald Cypress (*Taxodium distichum*)



#### Leaves

- Up to 0.75 inches long
- Deciduous
- Leaf branchlets resemble a feather



#### Cone

- Woody
- 1.5-2.5 inches long
- Sphere shaped



#### Bark

- Fibrous, red-brown but may be gray



#### Form

- Up to 90 feet tall
- Pyramid shaped crown
- Base of trunks are buttressed

### Eastern Hemlock (*Tsuga canadensis*)



#### Leaves

- Up to 0.5 inch in length
- In 2-ranks
- Dark green above & 2 white stripes below



#### Cone

- Woody
- Up to 0.75 inches long
- Oval w/ round scales



#### Bark

- Young- gray-brown & smooth
- Old- red-brown w/ ridges



#### Form

- Up to 80 feet tall
- Conical shape
- Fine branches w/ drooping end shoots

## Native, Uncommon Conifers



### Red Spruce (*Picea rubens*)

- **Leaves-** needles up to 0.75 inches long, 4- sided
- Branches not drooping
- **Cone-** 1.5-2.5 inch long w/ round scales; hang downward
- Found in western Maryland



### Balsam Fir (*Abies balsamea*)

- **Leaves-** needles up to 0.75 inches long, flattened
- **Cone-** 2-3.5 inches long; upright
- Found in western Maryland



### Atlantic White Cedar (*Chamaecyparis thyoides*)

- **Leaves-** scaly & up to 1/8 inch long; aromatic when crushed
- **Cone-** up to 0.5 inch in diameter
- Found in swamps in coastal plain



### Larch Aka Tamarack (*Larix laricina*)

- **Leaves-** needles up to 1 inch in length; deciduous & turn gold before falling
- **Cone-** up to 1 inch egg-shaped cone
- Found in western Maryland

## Resources & References

The key above is for commonly encountered conifers in Maryland. Some additional Maryland conifers (both **native** and **non-native**) include:

- American yew (*Taxus canadensis*); **native**, rare
- [Common yew](#) (*Taxus baccata*); **non-native**
- [Common juniper](#) (*Juniperus communis*); **native**
- [Douglas fir](#) (*Pseudotsuga menziesii*); **non-native**; used as X-mas tree
- [Fraser fir](#) (*Abies fraseri*); **non-native**; used as X-mas tree
- Japanese Pine (*Pinus thunbergii*); commonly planted
- [Leyland cypress](#) (*Cupressus x leylandii*); **non-native**; often planted as ornamental
- [Longleaf pine](#) (*Pinus palustris*); **non-native**
- [Mugo pine](#) (*Pinus mugo*); **non-native**; often planted as ornamental
- [Pond cypress](#) (*Taxodium ascendens*); **non-native**
- [Scots pine](#) (*Pinus sylvestris*); **non-native**

### References:

- BioImages; Vanderbilt University <http://bioimages.vanderbilt.edu/>
- Field Guide to Eastern Trees Eastern United States and Canada, including the Midwest By: George A. Petrides; Janet Wehr (Illustrated by); Roger Tory Peterson
- Maryland Biodiversity Project <http://www.marylandbiodiversity.com/>
- Maryland Native Plant Society <http://www.mdflora.org/>
- Virginia Tech Dendrology homepage- Tree identification fact sheets <http://www.cnr.vt.edu/DENDRO/DENDROLOGY/main.htm>
- United States Department of Agriculture PLANTS database- Geographic distributions, pictures and other information on plants. <http://plants.usda.gov/>

