

# Minnesota Tree Identification

## MN State Surveyors Convention February 8, 2013

Jason Meyer  
Area Manager/Forester  
St. Louis County Land and Minerals Department

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# Minnesota Forest Regions

\*Know which trees grow naturally in the different regions of MN\*

**Hardwood Region**

- red oak
- white oak
- bur oak
- basswood
- red maple
- sugar maple
- butternut
- hickory
- green ash
- white ash

**Key**

- Prairie
- Deciduous Forest
- Coniferous Forest

**Northern Boreal Forest**

- black spruce
- white spruce
- balsam fir
- white pine
- red pine
- jack pine
- tamarack
- northern white cedar
- aspen
- birch
- black ash
- red maple

**Prairie Region**

- cottonwood
- eastern red cedar
- bur oak

**Urban Areas**

?? - Can find anything!  
Non-native, trees out of their natural range, cultivars

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# Coniferous vs Deciduous

- Coniferous** trees bear their seeds in cones and have very narrow needlelike leaves. They are evergreen, meaning they maintain their leaves throughout the year (except for tamarack).
- Deciduous** trees do not bear their seeds in cones. They have broad leaves that drop in autumn.

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# Minnesota Coniferous Trees

Cedars – Pines – Spruces – Firs - Tamarack

Scale-like leaves or needle-like leaves?

Scale like leaves

Pointed sharp leaves - Eastern red cedar

Rounded dull leaves - Northern white cedar

Needle like leaves

Needles in bundles of 5 – White pine

Needles in bundles of 2 – Red pine, Jack pine

Needles occurring singly – White and Black spruce, Balsam fir

Needles occurring in clusters - Tamarack

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# Eastern Red Cedar



- \*Sharp, scale-like leaves
- \*Fleshy cones
- \*Flat bark – can peel in strips
- \*Wood has decay resistance and is marble colored



\*Common in the drier prairie region of SW MN

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# Northern White Cedar



- \*Dull scale-like leaves
- \*Woody cones
- \*Flat bark – can peel in strips
- \*Wood has decay resistance



\*Common in swamps of NE MN's boreal forest  
Also as yard trees in urban areas (arbovitae)

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## Eastern White Pine



\*Bark is smooth with greenish color when young and dark and furrowed when older



\*Needles are 2.5" – 5" and occur in bundles of 5



\*Cones are 4" to 8" long and cylindrical



\*Common in NE and central MN

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## Red Pine



\*Needles are 4"-6" and occur in bundles of 2



\*Cones are about 2" long

\*Bark is reddish brown and scaly



\*Commonly planted throughout MN but native range is central and NE MN.

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## Jack Pine



\*Needles are ¼" -3" and occur in bundles of 2



\*Cones are about 1½", curved and serotinous

\*Shortest life span of all MN pines

\*Common in North central and NE MN.



\*Bark is dull red and scaly

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## White Spruce



\*Needles occur singly, are 1/3"- 3/4" in length, pale in color, and are 4 - sided.

\*Cones are slender, about 2" in length with round and soft cone scales.



\*Bark is dark gray and scaly

\*Commonly planted throughout MN but native range is north central and NE MN.

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## Black Spruce



\*Commonly found in bogs of northern MN but does grow well on high ground as well.

\*Needles occur singly, are 1/2" in length, have bluish-green color, and are 4 - sided.

\* Cones are slender and 1/2"- 1 1/2" in length



\*Bark is greyish to reddish brown and scaly



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## Balsam Fir



\*Common conifer of northern MN. Also occurs in small pockets in SE MN. Most common conifer grown for Christmas trees.

\*Needles - thin, flat, 1/2"- to 1" long, dark green. Needles arranged on the twig in two rows and are resinous and fragrant.



\*Bark - smooth, grayish, and prominently marked by narrow horizontal blisters that ooze or squirt fragrant resin when punctured.



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## Tamarack



\*Needles are flat, soft, slender, length about 1" in length, in clusters on spurlike branches and distributed singly on terminal shoots; bright green in spring, turning dull yellow in September or October just before falling.

\*Tamarack is the only conifer in Minnesota that sheds all its leaves each fall



\*Bark is rough with reddish brown scales

\*Commonly found in bogs of northern MN but does grow well on high ground as well.

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## Deciduous Trees

### Trees which lose their leaves each fall

What kind of leaf branching? What kind of leaf? What kind of leaf edge?

**Leaf branching**  
Opposite leaves



Alternate leaves



**Kind of leaf (Where leaf attaches to the stem)**

Simple



Singly compound



Doubly compound



**Leaf edges**

Smooth



Toothed



Doubly toothed



Lobed




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## MN White Oaks

White Oak



\*Leaf - simple, alternate, rounded lobed leaves of fairly equal depths

\*Bark - pale gray with scaly ridges

\*Acorns  $\frac{3}{4}$ " - 1" (smooth cups)

\*Most common in SE MN

Bur Oak



\*Leaf - simple, alternate, rounded lobed leaves of distinctly different depths

\*Bark - thick deeply furrowed

\*Acorns vary in size (hairy, fringed cup)

\*Common in southern half of MN

\*Drought tolerant - common in western Prairie region

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## MN Red Oaks

### Northern Red Oak



- \*Leaf - simple, alternate, pointed lobes  
Cut about half way to leaf center
- \*Bark - young stems smooth  
on older trees, thick shallow fissures  
smooth-surfaced vertical plates
- \*Acorns - large 3/4"-2", blunt top
- \*Common on fertile grounds of  
central and SE MN

### Northern Pin Oak



- \*Leaf - simple, alternate, pointed lobes  
Cut about nearly to leaf center
- \*Bark - Rather smooth, divided by shallow  
fissures into irregular ridges and plates
- \*Acorn - length 1/2" to 1"
- \*Common dry ridges in SE MN and dry  
sandy, infertile soils of central MN

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## MN Birch

### Yellow Birch



- \*Leaf - Simple, alternate, length 3" to 5";  
oval to oblong, toothed; pale beneath;  
much larger than paper birch
- \*Bark - Yellow-gray color; peeling  
into thin papery strips
- \*Seeds in cone-shaped 1" catkin
- \*Common in northern MN on fertile,  
moist soils

### Paper Birch



- \*Leaf - Simple, alternate on stem, length 2"  
to 3"; oval or heart-shaped, pointed, rounded  
at base, irregularly toothed
- \*Bark - Thin, papery; becomes pure white  
with age
- \*Seeds in cone-shaped 1" catkin
- \*Fairly common throughout MN except SW

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## MN Aspen

### Quaking Aspen



- \*Leaf - Simple, alternate; broadly oval,  
pointed and finely toothed margin; from  
1" to 2" but often 4" on young shoots.
- \*Leafstalks flattened at right angles to leaves,  
leaves quake or tremble in a very slight breeze.
- \*Root system sprouts large numbers of new stems  
when tree is cut.
- \*Common throughout MN

### Big Tooth Aspen



- \*Leaf - Simple, alternate on stem, length  
2" to 4"; coarse-toothed;
- \*Root system sprouts large numbers of  
new stems when tree is cut.
- \*Found on sandy and rich soils, common  
in MN except for SW

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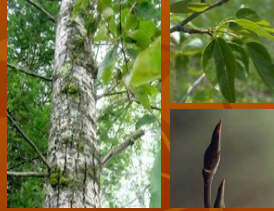
## Other Alternate Leafed Trees

Cottonwood



- \*Leaf - simple, alternate, 3" to 5" long and nearly as wide; broadly triangular, pointed, square at base, finely toothed or wavy
- \*Found throughout MN but commonly seen growing in western MN as it grows well under dry conditions
- \*Grows fast and large

Balsam Poplar



- \*Leaf - simple, alternate on stem, 3" to 6" long; ovate, long-pointed, edges finely toothed, dark green and shiny above
- \*Buds very sticky and with strong pungent aroma
- \*Fast growing tree found on cool moist soils primarily in northern MN

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## Other Alternate Leafed Trees

American Elm



- \*Leaf - simple, alternate on stem, length 4" to 6"; rather thick, dark green, doubly toothed on margin
- \*Bark - Ashy gray; irregular, flat-topped, thick ridges, tends to come off in flakes on older trees; outer bark layers alternate white and reddish-brown in cross section.
- \*Common throughout MN; used in urban plantings Dutch Elm disease decreased numbers statewide

Ironwood



- \*Leaf - simple, alternate on stem, length 2" to 4"; generally oblong with narrow tip; sharp, doubly toothed margins; thinner with more papery feel than elm leaf.
- \*Bark - Light gray-brown; furrowed with peeling or shredded appearance.
- \*Common in mixed hardwood forests of MN on rich, moist soil types

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## Other Alternate Leafed Trees

Basswood



- \*Leaf - simple, alternate on stem, length 3" to 6"; heart-shaped, saw-toothed, sharp-pointed at tip;
- \*Bark - light gray, smooth; becoming dark gray with shallow, vertical ridges.
- \*Common throughout MN except in the extreme north-eastern part; grows chiefly on rich soil

Hackberry



- \*Leaf - simple, alternate, length 2" to 4"; has long narrow, tapering points and sharply toothed margins; uneven at base
- \*Bark - grayish-brown with prominent, short, corky ridges.
- \*Found sparingly in the Southern and western part of MN. Tolerates a wide range of growing conditions, including urban stresses.

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## Other Alternate Leafed Trees

### Black Cherry



\*Leaf - simple, alternate, length 2" to 6", oval or pointedly lance-shaped, finely toothed margins

\*Bark - young bark smooth, reddish brown, white horizontal lines, bitter almond taste; on older trunks, thin, dark brown, rough, and broken into thick irregular plates.

\*Common in southern and central MN

### Willow



\*Many different species of willow common over much of MN over a variety of soil types

\*Leaf - simple, alternate, finely toothed

\*Bark - dark brown to gray on large trees; thick, rough, furrowed, and flaky

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## Alternate, Compound Leafed Trees

### Butternut



\*Leaf - alternate, singly compound with 11-17 individual leaflets

\*Bark - moderately thick gray to gray-brown bark

\*Nut - fruit is an ellipsoidal nut enclosed in a thin husk covered with sticky, glandular hairs.

\*Once common in the moist richer soils of central and southern MN but tree is becoming more rare. Butternut canker disease is killing most trees

\*Listed as a "Special concern species" in MN

### Black Walnut



\*Leaf - alternate, length 12" to 24", singly compound with 14 to 22 individual leaflets.

\*Bark - thick and very dark brown; divided by rather deep fissures into round ridges.

\*Nut - large, round nut enclosed in a solid green husk that is not sticky

\*Common on rich bottom lands and moist, fertile hillsides in southern MN

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## Alternate, Compound Leafed Trees

### Bitternut Hickory



\*Leaf - Alternate on stem, length 6" to 10", singly compound with 7 to 11 leaflets finely toothed margins.

\*Bark - Granite-gray, broken into platelike scales

\*Fruit - nut that is almost round with a sharply pointed tip; enclosed in a thin scaly husk that splits about halfway down in four lines

\*Found in rich, moist woods, southern MN up through sugar valleys of northern MN

### Honey Locust



\*Leaf - Alternate, 6" to 8" long, doubly compound with 18 to 28 small egg-shaped leaflets that have finely toothed margins

\*Bark - Dark gray or brown on old trees; divided into thin, tight scales, thorns

\*Fruit - pod, length 10" to 18"; flat dark brown or black when ripe

\*Found in southern MN and in urban areas

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## Opposite Leafed Trees

### Black Ash



\*Leaf - Opposite, length 9" to 16", singly compound with 7 to 11 yellowish-green leaflets, and not stalked

\*Common in cold moist lowlands throughout MN except western

### Green Ash



\*Leaf - Opposite, length 10" to 12", singly compound with 5 to 9 stalked leaflets, slightly toothed; bright green

\*Common throughout MN except western. Urban tree, similar to white ash

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## Opposite Leafed Trees

### Sugar Maple



\*Leaf - Simple, opposite, length 3" to 5"; three- to five-pointed, smooth-edged lobes; division between lobes rounded.

\*Bark - young trees light gray to brown, somewhat smooth; older trees gray to almost black with irregular plates or scales

\*Common on cool, rich soils in the eastern half of the state

### Red Maple



\*Leaf - Simple, opposite, length 2" to 4"; three- to five-pointed saw-toothed lobes separated by sharp angular openings, fall color red, orange or yellow

\*Bark - Smooth, light gray on young stems. Rougher and flakey when older

\*Common throughout MN, especially eastern MN

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## Opposite Leafed Trees

### Silver Maple



\*Leaf - Simple, opposite, length 4" to 6"; 3 to 5 lobes ending in long points with toothed edges separated by deep, angular openings

\*Bark - On young branches smooth, on old branches broken into long flakes or scales.

\*Common in southern Minnesota; northward to the upper Mississippi River

### Boxelder



\*Leaf - opposite, length 5" to 8", singly compound with 3 leaflets, irregularly toothed margins (often three-lobed);

\*Fruit - Samara, 1" to 1 1/2"; pairs are winged

\*Common throughout the state; grows naturally along streams and in cool ravines, urban areas

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## Urban Areas

Can find trees outside their natural range, non-natives, cultivars

Scotch Pine



\*Needles - 1 ½"-3 ½", in bundles of 2. Trunk typically crooked showing near form

Blue Spruce



\*Needles blue-green, to silvery-blue.

Russian Olive



\*Leaves - simple and alternate, silver on both sides, longer and lance-shaped. It has a gray-green hue when seen from a distance.

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## Urban Areas

Can find trees outside their natural range, non-natives, cultivars

Lombardy Poplar



\*Short lived tree with a slender, narrow form

Chinese Elm



\*Leaves smaller than American Elm, resistant to Dutch Elm disease

Northern Catalpa



\*Leaves - large heart-shaped, heavily fragrant white orchid like flowers, and elongated bean pods

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## Urban Areas

Can find trees outside their natural range, non-natives, cultivars

Norway Maple



\*Large maple leaves can range from dark green to dark purple. Popular shade tree planting.

Kentucky Coffee Tree



\*Native tree rare in SE MN but also found in Twin Cities. Large doubly compound leaf and large 6"-10" pod.

Norway Spruce



\*Popular landscape tree in MN. Branches appear to droop much more than other spruce.

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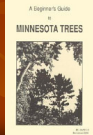
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## Minnesota Tree Identification On-line Resources

- **University of Minnesota Extension Web site**
  - \*Online tree identification key\*
  - <http://www.extension.umn.edu/distribution/naturalresources/DD6593.html>
  - Publication - A Beginners Guide to Minnesota Trees - Producer/Author: Rathke, D.
- **Minnesota Department of Natural Resources Web site - Minnesota native trees & shrubs**
  - [http://www.dnr.state.mn.us/trees\\_shrubs/index.html](http://www.dnr.state.mn.us/trees_shrubs/index.html)




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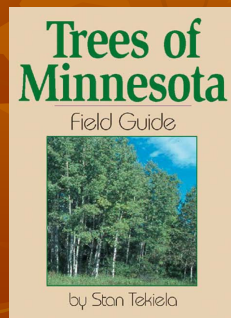
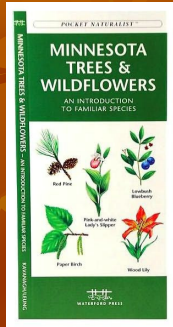
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## Minnesota Tree Identification Field Guides




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