



Virginia Tech Dendrology

northern white-cedar Cupressaceae *Thuja occidentalis* L.    symbol: THOC2

Leaf: Evergreen, scale-like, on main shoots, 1/4 inch long with long points. Lateral shoots are flattened, 1/8 inch long with short points.

Flower: Species is monoecious; solitary, females green with 4 to 6 scales; males are green tipped with brown and globose.

Fruit: A cone, 1/2 inch long, oblong, borne upright on the branches, scales are leathery, red-brown and rounded, with a small spine on the tip.

Twig: New growth is green and scale-like, turning brown, occurring in very flattened foliar sprays.

Bark: Fibrous, red-brown, weathering to gray; diamond-shaped patterns are usually apparent.

Form: A small to medium sized tree shaped like an arrowhead - a pyramid with a broad base and a small, round top, often with several main trunks.

Looks like: Atlantic white-cedar - Sawara-cedar - western redcedar - Oriental arborvitae



Additional Range Information: *Thuja occidentalis* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Landowner Factsheet

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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eastern redcedar Cupressaceae *Juniperus virginiana* L.    symbol: JUVI

Leaf: Evergreen, very small, with two types of leaves (often on the same tree), scale-like leaves 1/16 inch long, dark green, with 4 sides held tightly to twig and longer (1/4 inch), dark blue-green needle-like leaves that are more common on young trees and fast growing shoots.

Flower: Species is dioecious, but occasionally monoecious; males are small, yellow-brown, occurring in large groups; females are light blue-green.

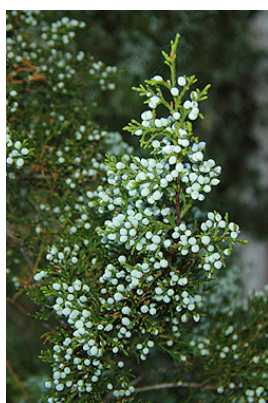
Fruit: Berry-like cones, light green in spring, turning dark blue and glaucous at maturity, about 1/4 inch in diameter, appearing in spring and maturing in the fall.

Twig: Green for several years, covered in scales, later turning brown.

Bark: Red-brown in color, exfoliating in long, fibrous strips, often ashy gray where exposed.

Form: A small tree with a dense ovoid or columnar crown reaching up to 60 feet tall.

Looks like: Atlantic white-cedar - common juniper - Chinese juniper - redberry juniper



Additional Range Information: *Juniperus virginiana* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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eastern white pine Pinaceae *Pinus strobus* L.    symbol: PIST

Leaf: Evergreen needles, 3 to 5 inches long, with five, slender, flexible needles per fascicle; fascicle sheath deciduous, needles appear blue-green because of 3 or more glaucous lines of stomata.

Flower: Species is monoecious; males cylindrical, yellow, in clusters near branch tips; females light green, tinged in red, at ends of branches.

Fruit: Cones are 4 to 7 inches long, cylindrical, with thick, rounded cone scales, very resinous, borne on a long stalk and maturing in late summer.

Twig: Slender, gray-green to orange-brown in color; buds long, ovoid, reddish brown.

Bark: On young trees, thin, smooth and gray-green with some lighter splotchy patches; later becoming thick, reddish brown to gray-brown with prominent finely scaly, rounded, long ridges and darker furrows.

Form: A large tree with a very straight trunk often reaching well over 100 feet in height. The crown is conical when young, later developing wispy, horizontal, upturning branches.

Looks like: Himalaya pine - western white pine



Additional Range Information: *Pinus strobus* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Wood

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Virginia Tech Dendrology

red pine Pinaceae *Pinus resinosa* Aiton   symbol: PIRE

Leaf: Evergreen needles, 4 to 6 inches long, with two needles per fascicle that snap cleanly when bent, dark green.

Flower: Species is monoecious; males almost round, light red, in large clusters at branch tips; females a round, short cone, reddish brown.

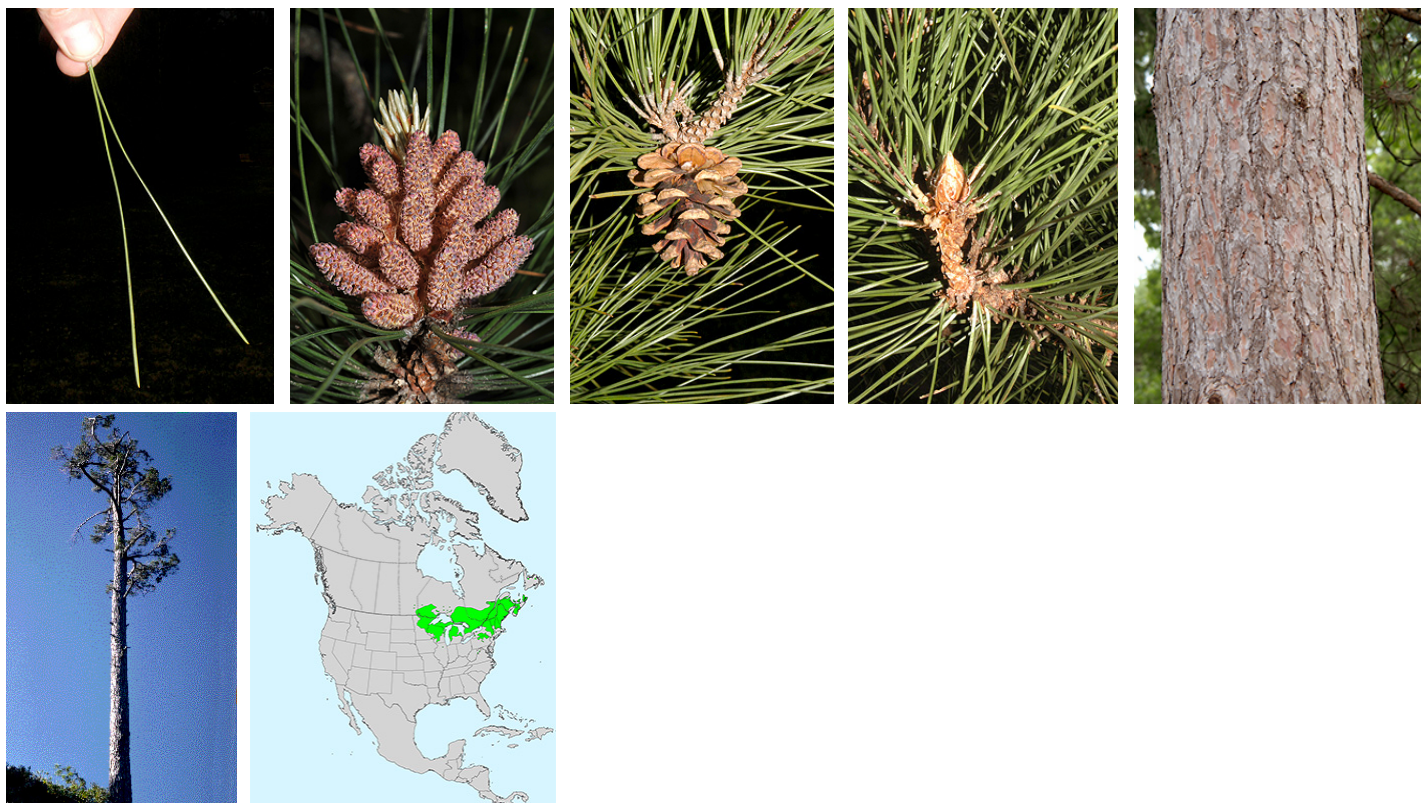
Fruit: Cones are ovoid, 1 1/2 to 2 1/2 inches long, shiny chestnut brown, umbo is not armed, maturing in early summer.

Twig: Medium textured, orange-brown in color with narrow, ovoid orange-brown buds.

Bark: On young trees, red-brown or pink to gray, flaky; eventually becoming plated, the plates have scaly surfaces with a reddish tinge.

Form: A medium size tree reaching up to 90 feet tall, with oval crown and a clear bole. Foliage is tufted, resembling a fox tail.

Looks like: Austrian pine - Japanese black pine - Japanese red pine



Additional Range Information: *Pinus resinosa* is native to North America. Range may be expanded by planting.

Download the full-size PDF map.

More Information: Landowner Factsheet

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - [USDAFS Forest Products Lab](#)

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jack pine Pinaceae *Pinus banksiana* Lamb.   symbol: PIBA2

Leaf: Evergreen needles, 3/4 to 1 1/2 inches long, two twisted, divergent needles per fascicle, fascicle sheath is present but short; yellow-green in color.

Flower: Species is monoecious; males cylindrical, yellow-green, in clusters at twig tips; females oval, reddish.

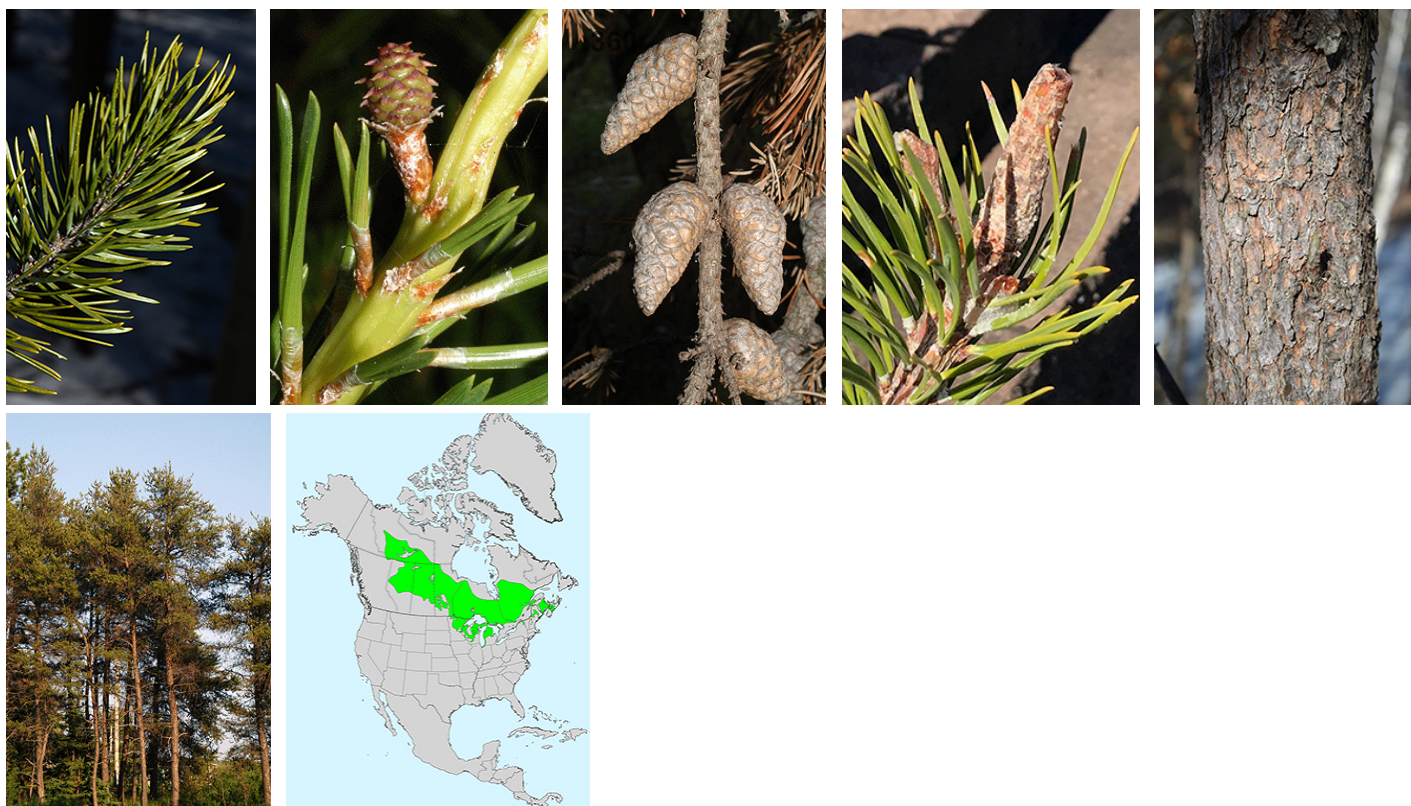
Fruit: Serotinous, persisting on the tree for several years; 1 1/2 to 2 inches long, curved, light brown but graying with age; apophysis round and umbo armed with a small prickle.

Twig: Yellow to greenish brown when young, turning gray-brown with age, very resinous, narrowly ovoid buds.

Bark: At first dark and scaly, the bark later develops scaly ridges.

Form: A small to medium sized tree up to 80 feet tall, with a small, irregular crown. Dead branches self-prune poorly. Cones are retained for several years, resulting in a coarse appearance.

Looks like: lodgepole pine - Scots pine - Virginia pine



Additional Range Information: *Pinus banksiana* is native to North America. Range may be expanded by planting.

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American elm Ulmaceae *Ulmus americana* L.    symbol: ULAM

Leaf: Alternate, simple, ovate to oblong, 3 to 5 inches long, 1 to 3 inches wide, margin coarsely and sharply doubly serrate, base conspicuously inequilateral, upper surface green and glabrous or slightly scabrous, paler and downy beneath.

Flower: Species is monoecious; small, in drooping clusters of 3 to 5, appear in early spring before leaf buds open.

Fruit: Rounded, flat, papery, wafer-like samaras, 3/8 to 1/2 inch across, deeply notched at apex, hairless except for margin; ripen in spring.

Twig: Slender, glabrous, slightly zigzag, reddish brown; buds ovate, over 1/4 inch long, reddish brown with darker edged scales, often placed a little to one side of the twig.

Bark: Dark, ashy gray, flat-topped ridges separated by diamond-shaped fissures; outer bark when sectioned shows distinct, alternating, buff colored and reddish brown patches. When young it is often quite spongy.

Form: In the open, the trunk is usually divided into several large, ascending and arching limbs, ending in a maze of graceful drooping branchlets.

Looks like: slippery elm - winged elm - cedar elm - field elm



Additional Range Information: *Ulmus americana* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

yellow birch Betulaceae *Betula alleghaniensis* Britton   symbol: BEAL2

Leaf: Alternate, simple, ovate, 4 to 6 inches long, pinnately-veined, acute tip, rounded base, doubly serrate margins, somewhat soft or fuzzy, dark green above and paler below.

Flower: Species is monoecious; males are preformed catkins occurring near ends of twig, 1 inch long, reddish green; females are upright 5/8 inches long, reddish green; appear or elongate (males) in the spring.

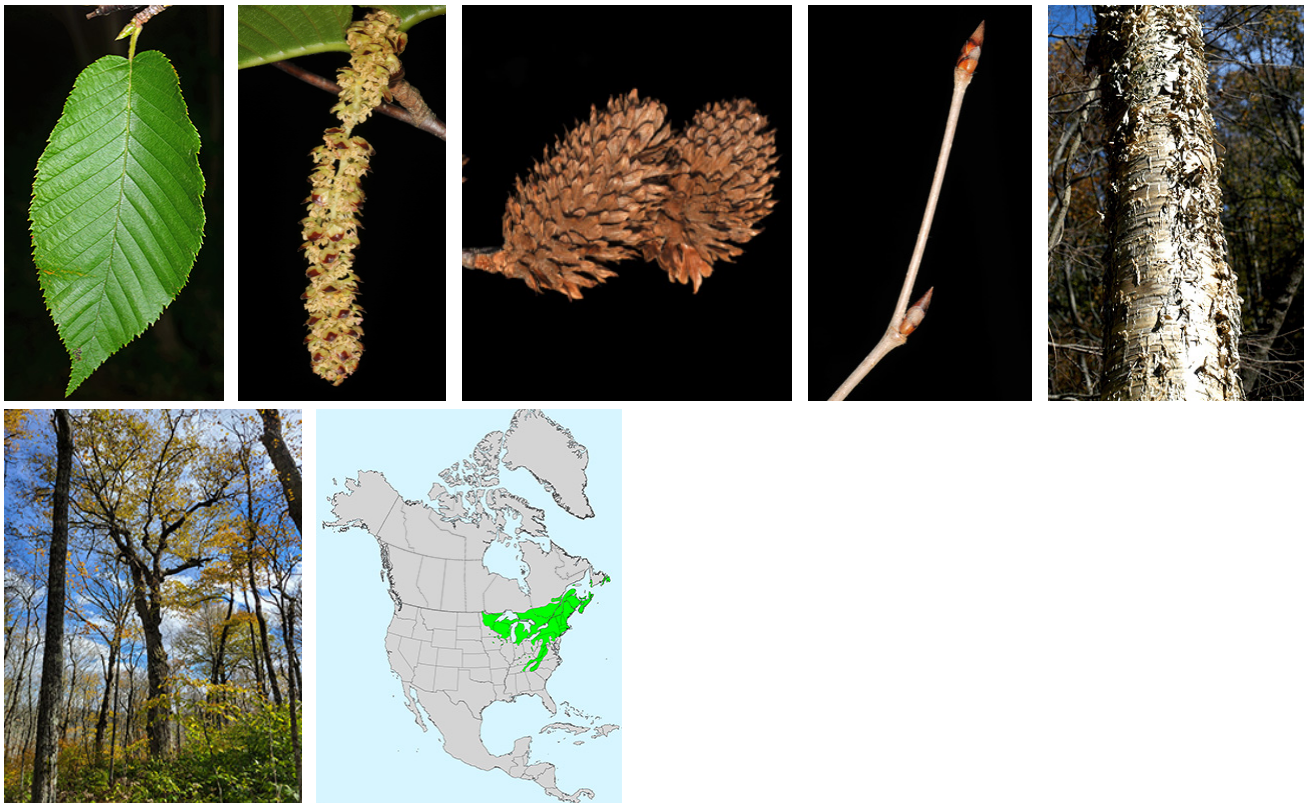
Fruit: Cone like, 3/4 to 1 1/4 inches long, rather plump, upright, with many hairy scales containing 2-winged nutlets, matures in fall and disperse over winter.

Twig: Slender, green-brown and hairy when young, light-brown and smooth later; spur shoots present on older trees; buds are ovoid, sharply pointed, reddish brown with ciliate scale margins. Twigs have a wintergreen smell when broken.

Bark: On younger stems shiny bronze (sometimes gray), peeling horizontally in thin, curly, papery strips; older trees develop red-brown scaly plates.

Form: A medium size tree to 75 feet with an irregular crown.

Looks like: sweet birch - paper birch - hornbeam - hophornbeam



Additional Range Information: *Betula alleghaniensis* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood - Landowner Factsheet

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - USDAFS Forest Products Lab

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Virginia Tech Dendrology

white ash Oleaceae *Fraxinus americana* L.    symbol: FRAM2

Leaf: Opposite, pinnately compound with 7 serrate to entire leaflets that are ovate to somewhat lanceolate, 8 to 12 inches long, essentially hairless, green above and slightly paler below.

Flower: Species is dioecious; light green to purplish, both sexes lacking petals, females occurring in loose panicles, males in tighter clusters, appear after the leaves unfold.

Fruit: A one-winged, dry, flattened samara with a full, rounded, seed cavity, maturing in fall and dispersing over winter.

Twig: Stout, gray-olive-green, hairless, leaf scars round at the bottom, notched at the top, with lateral buds in the notch; terminal bud is large, brown, with leathery scales and flanked by two lateral buds.

Bark: Ashy gray to brown in color, with interlacing corky ridges forming obvious diamonds; older trees may be scaly.

Form: A large tree up to 80 feet tall that typically develops a straight, clear bole (particularly on good sites), usually with a narrow oblong crown.

Looks like: green ash - black ash - blue ash - boxelder



Additional Range Information: *Fraxinus americana* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

white oak Fagaceae *Quercus alba* L.    symbol: QUAL

Leaf: Alternate, simple, oblong to ovate in shape, 4 to 7 inches long; 7 to 10 rounded, finger-like lobes, sinus depth varies from deep to shallow, apex is rounded and the base is wedge-shaped, green to blue-green above and whitish below.

Flower: Species is monoecious; male flowers are yellow-green, borne in naked, slender catkins, 2 to 4 inches long; female flowers are reddish green and appear as very small single spikes; appearing with the leaves in mid-spring.

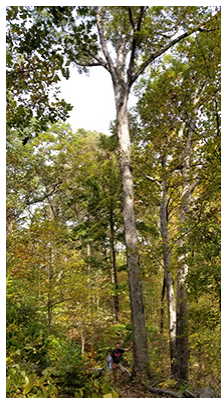
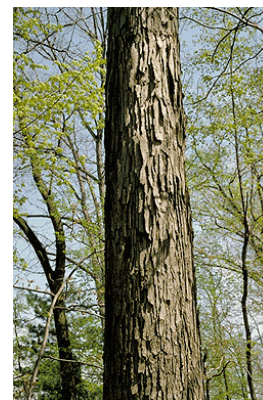
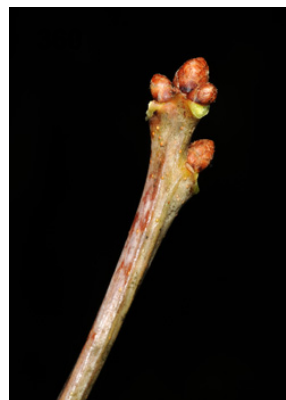
Fruit: Ovoid to oblong acorn, cap is warty and bowl-shaped, covers 1/4 of the fruit; cap always detaches at maturity; matures in one growing season in the early fall.

Twig: Red-brown to somewhat gray, even a bit purple at times, hairless and often shiny; multiple terminal buds are red-brown, small, rounded (globose) and hairless.

Bark: Whitish or ashy gray, varying from scaly on smaller stems to irregularly platy or blocky on large stems. On older trees smooth patches are not uncommon.

Form: A very large tree; when open grown, white oaks have rugged, irregular crowns that are wide spreading, with a stocky bole. In the forest crowns are upright and oval with trees reaching up to 100 feet tall and several feet in diameter.

Looks like: overcup oak - bur oak - post oak - sand post oak



Additional Range Information: *Quercus alba* is native to North America. Range may be expanded by planting.

Download the full-size PDF map.

More Information: Fall Color - Wood

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Virginia Tech Dendrology

Scots pine Pinaceae *Pinus sylvestris* L. symbol: PISY

Leaf: Evergreen needles, 1 1/2 to 3 inches long, with two stout, twisted needles per fascicle, blue-green with distinct stomatal bands.

Flower: Species is monoecious; males cylindrical, yellow, in large clusters along twigs; females oval, yellow-green to purple.

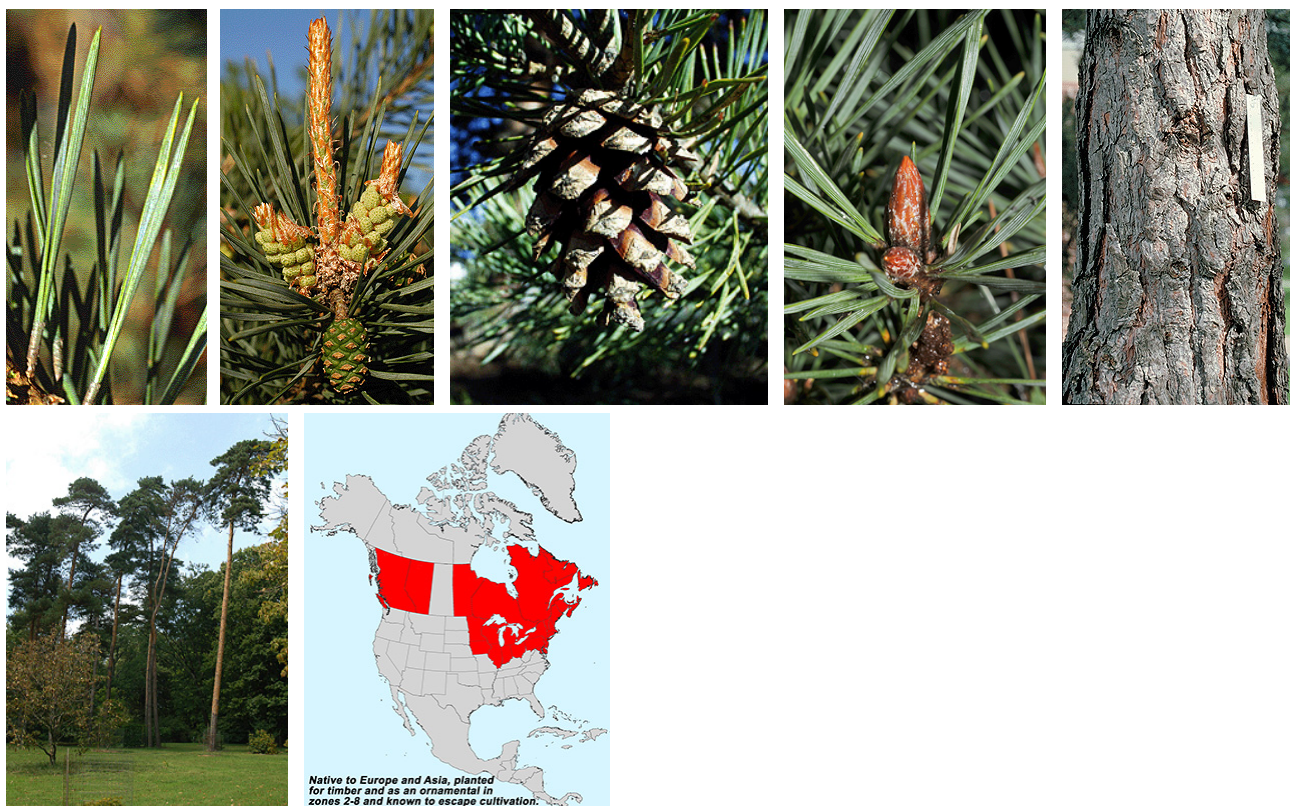
Fruit: Cones are ovoid, 1 1/2 to 2 1/2 inches long, yellow-brown in color and slightly stalked; umbo is somewhat armed, with a blunt spine; apophysis resembles a pyramid, particularly on basal scales; maturing in the fall.

Twig: Moderately stout, green when young, changing to yellow-brown to olive-brown with large orangish, narrowly ovoid buds.

Bark: Orange to orange-brown and scaly or peeling when young; later developing irregular gray or red-brown ridges and furrows. Upper crowns always show orange peeling bark.

Form: A medium sized tree reaching up to 90 feet tall, often with a twisted or poorly formed trunk (depending on origin of seed). Young crowns are rounded; older crowns become round-topped.

Looks like: jack pine - Virginia pine - Japanese red pine



Additional Range Information: *Pinus sylvestris* is planted in the USDA hardiness zones shown above and may seed into the landscape. Download the full-size PDF map.

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information

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Virginia Tech Dendrology

tamarack Pinaceae *Larix laricina* (Du Roi) K. Koch   symbol: LALA

Leaf: Deciduous, flat needle, light green, appear in spirals on spur shoots after first year, 3/4 to 1 inch long, turn yellow in the fall.

Flower: Species is monoecious; males yellowish, small and round in clusters near branch tips; females reddish-brown, numerous scales, egg-shaped.

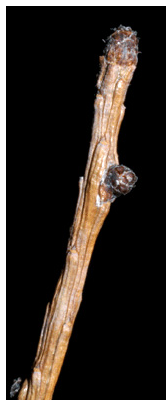
Fruit: Small, 3/4 to 1 inch, light brown, egg-shaped cone; persist throughout the winter.

Twig: Slender, light brown, numerous short, spur branches.

Bark: Rough, small scaly patches, grayish brown to reddish brown.

Form: Open, narrow, conical crown; trunk straight, grows to 80 feet; 1 1/2 feet in diameter.

Looks like: Dunkeld larch - western larch - subalpine larch - European larch



Additional Range Information: *Larix laricina* is native to North America. Range may be expanded by planting.

Download the full-size PDF map.

More Information: Fall Color - Landowner Factsheet

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Virginia Tech Dendrology

American basswood Tiliaceae *Tilia americana* L.    symbol: TIAM

Leaf: Alternate, simple, ovate to cordate, 5 to 6 inches long, with serrate margins, pinnately veined, base is unequally cordate, green above and paler below.

Flower: Species is monoecious; pale yellow, borne below a long, gracefully curving leafy wing in a many branched cluster, several inches long, appearing in early to mid-summer.

Fruit: A round nutlet (1/4 inch) that is covered with gray-brown hair; occur in a hanging cluster with a curving, leafy bract acting as wing on top of the cluster, ripening in the fall.

Twig: Moderately stout, zigzag, green (summer) or red (winter); terminal bud is false, each very plump with one side bulging out disproportionately. Buds are edible but very mucilaginous.

Bark: At first smooth and gray-green, later turning gray-brown and becoming ridged with long, shallow furrows and flat topped ridges. The bark is very fibrous.

Form: A medium sized tree to 80 feet. Older trees very often sprout from the base when cut. Stumps sprout prolifically, often resulting in clumps of several trees.

Looks like: littleleaf linden - silver linden



Additional Range Information: *Tilia americana* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood

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Virginia Tech Dendrology

paper birch Betulaceae *Betula papyrifera* Marshall    symbol: BEPA

Leaf: Alternate, simple, pinnately-veined, ovate in shape, 3 to 5 inches long, with irregularly doubly serrate margins, an acute tip and rounded base (occasionally heart-shaped), green above and paler below.

Flower: Species is monoecious; preformed male catkins near the end of the twig in groups of 2 to 5, 3/4 to 1 1/4 inches long; female are upright, 1 to 1 1/4 inches long, appear or elongate (males) in mid-spring.

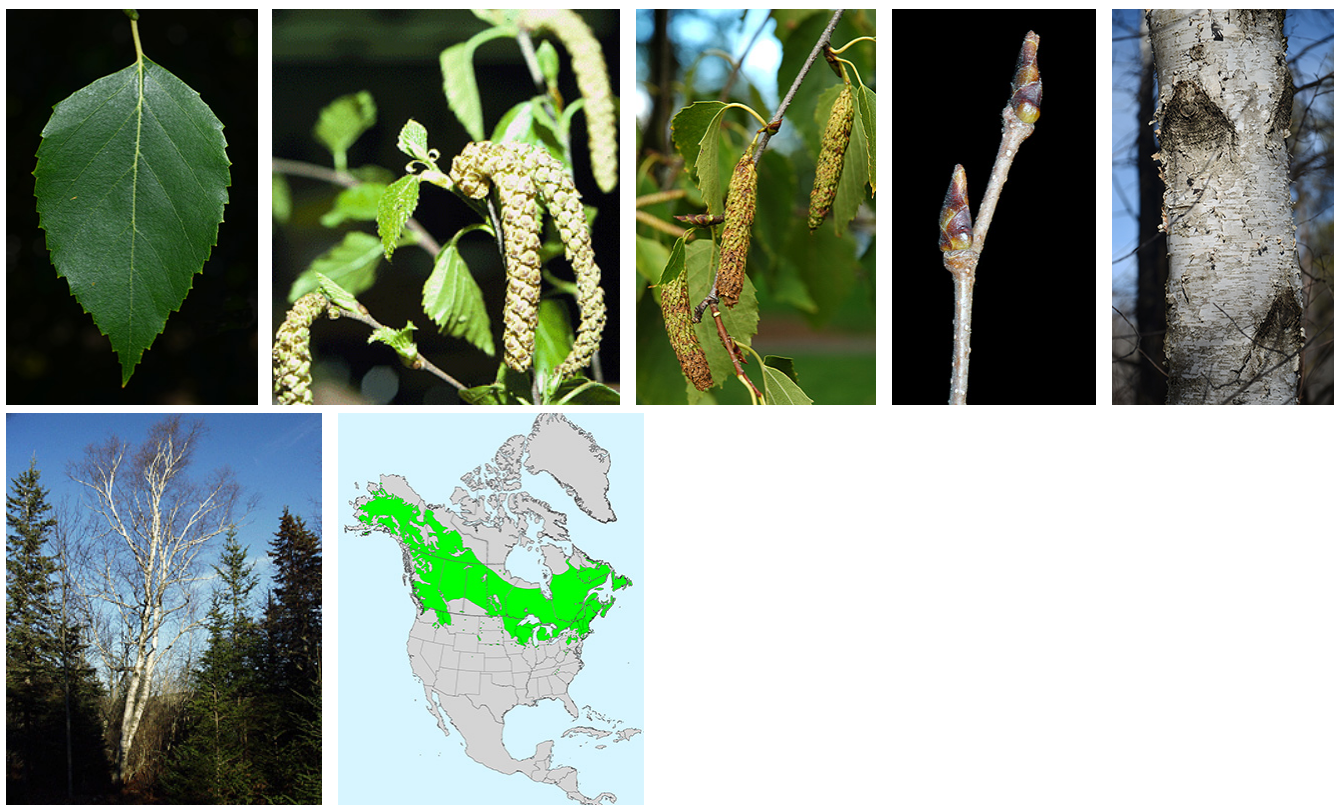
Fruit: Cone like, cylindrical 1 to 1 1/2 inches long, deciduous at maturity, releasing elliptical 2-winged nutlets, mature in the autumn and disperse over the winter.

Twig: Slender, dull red-brown, numerous lighter lenticels, lacking wintergreen smell when cut; terminal bud absent, lateral buds are gummy, green and chestnut brown in color, spur shoots present on older growth.

Bark: Reddish brown with light lenticels on very young stems; later turning chalky to creamy white, peeling in horizontal papery strips; brown to black and may be furrowed at base; orange inner bark.

Form: A medium sized tree to 70 feet with a pyramidal or irregular crown, often with several trunks.

Looks like: river birch - European weeping birch - gray birch - water birch



Additional Range Information: *Betula papyrifera* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood - Landowner Factsheet

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Virginia Tech Dendrology

quaking aspen Salicaceae *Populus tremuloides* Michx.   symbol: POTR5

Leaf: Alternate, simple, 1 to 3 inches long, green above and paler below, heart-shaped to nearly round with a fine toothed margin, petiole is flattened.

Flower: Species is dioecious; male and female hanging catkins 1 to 3 inches long.

Fruit: Catkin (2 to 4 inches long), with attached light green capsules which contain many small hairy seeds.

Twig: Slender, glabrous, reddish brown often with a gray, waxy film; buds conical, reddish brown, terminal bud 1/4 inch long, may be slightly resinous.

Bark: At first smooth, creamy yellowish-white to very light green; later developing thick furrows and becoming dark, especially near the base.

Form: Small (30 to 40 feet tall) upright tree, which often occurs in thickets.

Looks like: bigtooth aspen - black cottonwood - balsam poplar - Fremont cottonwood



Additional Range Information: *Populus tremuloides* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood - Landowner Factsheet

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - USDAFS Forest Products Lab

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Virginia Tech Dendrology

bigtooth aspen Salicaceae *Populus grandidentata* Michx.   symbol: POGR4

Leaf: Alternate, simple, orbicular to ovate, 3 to 4 inches long, pinnately veined, large blunt teeth, petiole flattened vetrically, green above and paler below.

Flower: Species is dioecious; males and females occur on hanging, 2 to 3 inch long fuzzy catkins, appearing before the leaves in early spring.

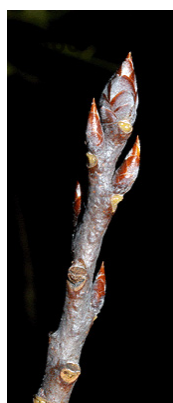
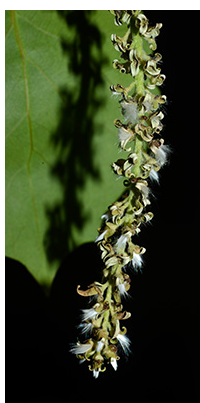
Fruit: Cottony seeds, 1/4 inch long, borne in small dehiscent capsules that occur along catkins, maturing late spring to early summer.

Twig: Medium-textured, gray-brown in color; buds are ovate, pointed, red-brown to gray with some pubescence; leaf scars raised and heart-shaped. When chewed, the twig has a bitter, aspirin taste.

Bark: Thin, gray, olive-green to milky green and smooth on young stems; later gray-brown, ridged with diamond shaped lenticels and splits forming.

Form: A medium sized tree with an irregular, thin crown and a straight bole.

Looks like: European white poplar - quaking aspen - balsam poplar - eastern cottonwood



Additional Range Information: *Populus grandidentata* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood

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Virginia Tech Dendrology

balsam fir Pinaceae *Abies balsamea* (L.) Mill.    symbol: ABBA

Leaf: Flattened needles, 3/4 inch long, blunt or notched at end, may be shorter and sharper pointed on upper branches, shiny dark green above and silvery-blue below.

Flower: Species is monoecious; males occur on undersides of leaf axils, purple to yellow-brown; females occur in upper crown, are purple and inconspicuous.

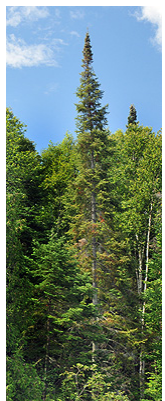
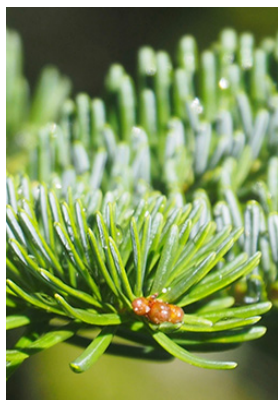
Fruit: Resinous cones are upright, 2 to 3 1/2 inches long, oblong to cylindrical, green with purple tinge, with bracts shorter than the scales; scales are deciduous with seed dispersal in late summer.

Twig: Yellow-green, later turning gray; buds are reddish brown and resin covered; leaf scars are flat and rounded.

Bark: Shiny silvery gray-brown, smooth except for numerous, raised resin blisters; largest stems may become a bit scaly.

Form: Balsam fir is a small to medium sized tree reaching 80 feet tall with a very narrow, spire-like crown.

Looks like: Fraser fir - white fir - eastern hemlock - English yew



Additional Range Information: *Abies balsamea* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Wood - Landowner Factsheet

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Virginia Tech Dendrology

northern red oak Fagaceae *Quercus rubra* L.    symbol: QURU

Leaf: Alternate, simple, 5 to 8 inches long, oblong in shape with 7 to 11 bristle-tipped lobes, sinuses extend 1/3 to 1/2 of the way to midvein, generally very uniform in shape, dull green to blue-green above and paler below.

Flower: Species is monoecious; males in yellow-green slender, hanging catkins, 2 to 4 inches long; females are borne on short axillary spikes, appearing with the leaves in spring.

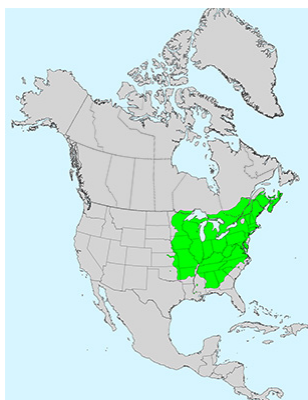
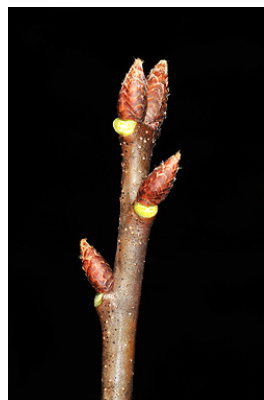
Fruit: Acorns are 3/4 to 1 inch long and nearly round; cap is flat and thick, covering about 1/4 or less of the acorn, resembling a beret; matures in 2 growing seasons, in late summer and fall.

Twig: Quite stout, red-brown and glabrous; terminal buds multiple, quite large, conical, and covered with red-brown, mostly hairless scales but terminal scales may bear some frosty pubescence.

Bark: On young stems, smooth; older bark develops wide, flat-topped ridges and shallow furrows. The shallow furrows form a pattern resembling ski tracks.

Form: A medium sized to large tree that reaches up to 90 feet tall, develops a short trunk and round crown when open grown, straight with a clear, long bole when grown with competition.

Looks like: cherrybark oak - black oak - scarlet oak - Shumard oak



Additional Range Information: *Quercus rubra* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

sugar maple Aceraceae *Acer saccharum* Marshall    symbol: ACSA3

Leaf: Opposite, simple and palmately veined, 3 to 6 inches long, 5 delicately rounded lobes, entire margin; green above, paler below.

Flower: Light yellow-green, small, clustered, hanging from a long, slender (1 to 3 inch) stem, appearing with or slightly before the leaves in early spring.

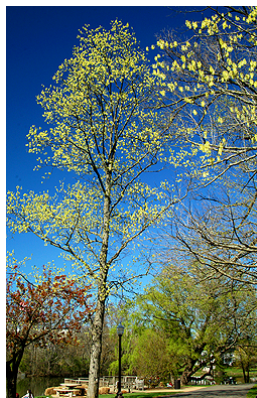
Fruit: Two-winged horseshoe-shaped samaras about 1 inch long, appearing in clusters, brown when mature in the fall.

Twig: Brown, slender and shiny with lighter lenticels; terminal buds brown, very sharp pointed, with tight scales.

Bark: Variable, but generally brown, on older trees it becomes darker, develops furrows, with long, thick irregular curling outward, firm ridges.

Form: Medium to tall tree (to 100 feet) with very dense elliptical crown.

Looks like: red maple - black maple - Norway maple - Florida maple



Additional Range Information: *Acer saccharum* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

red maple Aceraceae *Acer rubrum* L.    symbol: ACRU

Leaf: Opposite, simple, 3 to 5 palmate lobes with serrated margin, sinuses relatively shallow (but highly variable), 2 to 4 inches long; green above, whitened and sometimes glaucous or hairy beneath.

Flower: Attractive but small, occur in hanging clusters, usually bright red but occasionally yellow, appear in early spring, usually before leaves.

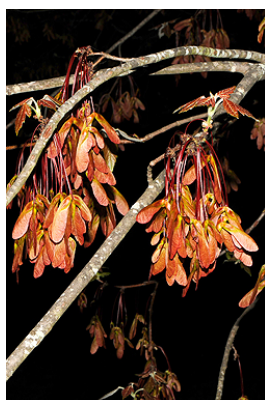
Fruit: Clusters of 1/2 to 3/4 inch long samaras with slightly divergent wings, on long slender stems. Light brown and often reddish, ripen in late spring and early summer.

Twig: Reddish and lustrous with small lenticels, buds usually blunt, green or reddish (fall and winter) with several loose scales usually present, leaf scars V-shaped, 3 bundle scars, lateral buds slightly stalked, may be collateral buds present.

Bark: On young trees, smooth and light gray, with age becomes darker and breaks up into long, fine scaly plates.

Form: Medium sized tree up to 90 feet. In forest, trunk usually clear for some distance, in the open the trunk is shorter and the crown rounded.

Looks like: silver maple - Norway maple - mapleleaf viburnum - sugar maple



Additional Range Information: *Acer rubrum* is native to North America. Range may be expanded by planting.

[Download the full-size PDF map.](#)

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

American beech Fagaceae *Fagus grandifolia* Ehrh.    symbol: FAGR

Leaf: Alternate, simple, elliptical to oblong-ovate, 2 1/2 to 5 1/2 inches long, pinnately-veined, 11-14 pairs of veins, with each vein ending in a sharp distinct tooth, shiny green above, very waxy and smooth, slightly paler below.

Flower: Species is monoecious; male flowers borne on globose heads hanging from a slender 1 inch stalk, female flowers borne on shorter spikes, appearing just after leaves in the spring.

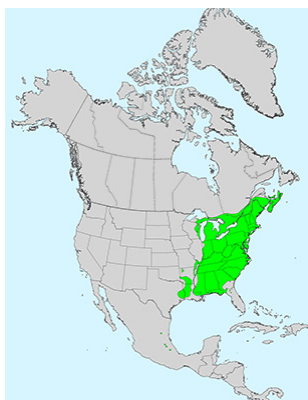
Fruit: Nuts are irregularly triangular, shiny brown and edible, found in pairs within a woody husk covered with spines, 1/2 to 3/4 inch long, maturing in the fall.

Twig: Very slender, zigzag, light brown in color; buds are long (3/4 inch), light brown, and slender, covered with overlapping scales (best described as "cigar-shaped"), widely divergent from the stems, almost looking like long thorns.

Bark: The bark is smooth, thin, and gray in color even on the largest stems. Beech bark diseases severely deforms the smooth bark.

Form: A medium to large tree up to 100 feet tall with a rounded crown. Often found in thickets produced by root suckering. Old trees may be surrounded by a ring of young beech.

Looks like: European beech - downy serviceberry - American chestnut - sawtooth oak



Additional Range Information: *Fagus grandifolia* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

black cherry Rosaceae *Prunus serotina* Ehrh.    symbol: PRSE2

Leaf: Alternate, simple, 2 to 5 inches long, oblong to lance-shaped, finely serrated, very small inconspicuous glands on petiole, dark green and lustrous above, paler below; usually with a dense yellowish-brown, sometimes white pubescence along mid-rib.

Flower: Small white flowers in hanging, narrow clusters 4 to 6 inches long, appearing in late spring.

Fruit: Dark purple round drupe, almost black when ripe, 1/3 inch in diameter with a bitter-sweet taste; matures in late summer.

Twig: Slender, reddish brown, sometimes covered in gray epidermis, pronounced bitter almond odor and taste; buds are very small (1/5 inch), covered in several glossy, reddish brown to greenish scales; leaf scars are small and semicircular with 3 bundle scars.

Bark: Smooth with numerous short, narrow, horizontal lenticels when young; becomes very dark (nearly black), breaking up into small, rough, irregular, upturned plates (burnt corn flakes), when older.

Form: Medium sized tree which (on good sites) develops a long, straight, clear bole and can reach heights approaching 100 feet.

Looks like: sweet cherry - American plum - choke cherry - fire cherry



Additional Range Information: *Prunus serotina* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

eastern hemlock Pinaceae *Tsuga canadensis* (L.) Carrière    symbol: TSCA

Leaf: Evergreen, flat, single needles, 1/2 inch long, tapering to a dull point, primarily two-ranked, shiny dark green above, 2 lines of white stomata below.

Flower: Species is monoecious; males yellow, small, round; females light green at branch tips.

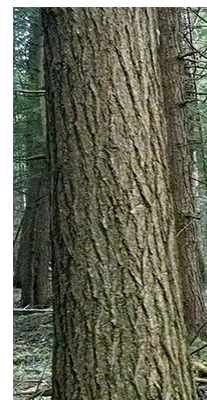
Fruit: Ovoid light brown cone, 3/4 inch long with rounded, entire scales, maturing in early fall.

Twig: Slender, gray-brown in color; buds are very small.

Bark: Initially gray-brown and smooth then turning scaly; older trees are red-brown with wide ridges and furrows; when cut or broken, purple streaks are obvious.

Form: A medium sized tree with a dense, conical crown, fine branches and a drooping terminal shoot reaching up to 80 feet tall, typically a poor natural pruner.

Looks like: Carolina hemlock - western hemlock - mountain hemlock - English yew



Additional Range Information: *Tsuga canadensis* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

sassafras Lauraceae *Sassafras albidum* (Nutt.) Nees    symbol: SAAL5

Leaf: Alternate, simple, ovate to elliptical, entire, 3 to 6 inches long, pinnately veined and variably lobed, green above and below and fragrant when crushed; leaves may be unlobed, 2-lobed (resemble a mitten), or 3-lobed (resemble a trident), and all three shapes may be present on the same branch.

Flower: Species is dioecious; small but quite showy, both male and females are bright yellow-green, borne in 2 inch racemes appearing in early to mid-spring.

Fruit: Dark shiny blue, ovoid, fleshy drupes (1/3 inch long) that are borne in a red cup attached to a red stalks, held upright, maturing late summer.

Twig: Slender, green and sometimes pubescent, with a spicy-sweet aroma when broken; buds are 1/4 inch long and green; twigs from young plants displayed at a uniform 60 degree angle from main stem.

Bark: Brown, with cinnamon-brown inner bark, becoming coarsely ridged and furrowed; when cut the spicy aroma is obvious.

Form: Small to medium sized tree up to 60 feet tall with an irregular often twisted trunk and main branches, usually flat-topped crown; root suckering may result in thickets.

Looks like: sourwood - blackgum - common persimmon



Additional Range Information: *Sassafras albidum* is native to North America. Range may be expanded by planting.

Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - [USDAFS FEIS Silvics](#) - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

blue spruce Pinaceae *Picea pungens* Engelm.    symbol: PIPU

Leaf: Evergreen needles, 3/4 to 1 1/4 inches long, stiff and very sharp (spine-like), displayed nearly straight out from twig, silvery blue to dark green. Strong acidic taste. Each needle borne on a raised, woody peg (sterigma).

Flower: Species is monoecious; males emerge reddish purple and ripen to yellow-brown, scattered throughout trees; females purple, upright, in tops of the trees.

Fruit: Cones are 2 to 4 inches long, cylindrical, light brown in color, scales are flexible, pointed with jagged erose margins, mature in the fall.

Twig: Stout (when compared to other spruces), hairless, tan; needles are borne on woody pegs; bud scales brown and noticeably reflexed.

Bark: Gray to red-brown, young trees with small, thin scales; older trees still scaly but with shallow furrows.

Form: A medium to large tree with pyramidal form reaching up to 80 feet tall. Branches appear layered, especially with age.

Looks like: Engelmann spruce - Norway spruce - white spruce - black spruce



Additional Range Information: *Picea pungens* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information

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Virginia Tech Dendrology

hophornbeam Betulaceae *Ostrya virginiana* (Mill.) K. Koch    symbol: OSVI **AKA, Ironwood**

Leaf: Alternate, simple, pinnately veined, oval to broadly lanceolate, 3 to 5 inches long, with a doubly serrate margin, green above, paler and fuzzy in the axils of veins and on the petiole.

Flower: Species is monoecious; males are preformed catkins, 1/2 to 1 inches long, in clusters of 3's (resemble birds toes), present throughout the winter; females appear in spring and are slender, light green catkins, 1/2 inch long, appearing or elongating (males) in spring.

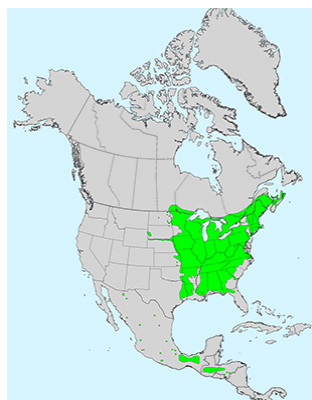
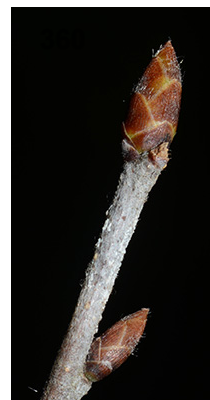
Fruit: Very distinctive, resembling hops. More specifically, a 1/4 inch nutlet is enclosed in a dried, leafy, inflated sac. Several sacs hang from one stem, 1 1/2 to 2 1/2 inches long; maturing in late summer and persisting through winter.

Twig: Slender, reddish brown, smooth, and may be slightly pubescent. Male catkins present on the end of the branch; buds are small, plump ovate, and covered with green and red-brown, finely grooved (vertically) scales.

Bark: When young smooth, reddish brown, with horizontal lenticels (cherry like), later turning light brown and developing a shreddy appearance, broken into small plates or loose scales that are easily broken off with a brush of the hand.

Form: A small tree up to 40 feet tall that develops a round crown of fine branches.

Looks like: sweet birch - yellow birch - hornbeam - American hazel



Additional Range Information: *Ostrya virginiana* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

white spruce Pinaceae *Picea glauca* (Moench) Voss    symbol: PIGL

Leaf: Evergreen needles, stiff, 1/3 to 3/4 inch long, square in cross section, needle tips are pointed but not sharp, when crushed a pungent odor is apparent (some say similar to cat urine), green to gray-green. Each needle borne on a raised, woody peg (sterigma).

Flower: Species is monoecious; males emerge reddish but turn yellow when shedding pollen; females purple.

Fruit: Cones are 1 1/2 to 2 1/2 inches long, cigar shaped, light brown in color, scales are rounded with entire margins, mature in late summer.

Twig: Slender, light brown or pale, sometimes glaucous, hairless. Needles borne on woody pegs.

Bark: Thin, gray-brown in color, smooth, later flaky or scaly.

Form: Conical, medium sized trees reaching up to 90 feet tall.

Looks like: black spruce - red spruce - Sitka spruce - blue spruce



Additional Range Information: *Picea glauca* is native to North America. Range may be expanded by planting.

Download the full-size PDF map.

More Information: Wood - Landowner Factsheet

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

American sycamore Platanaceae *Platanus occidentalis* L.    symbol: PLOC

Leaf: Alternate, simple, palmately veined, 4 to 8 inches wide, ovate in shape, with three to five lobes, margins coarsely toothed, petiole bases encircle and enclose the buds, veins may be pubescent below.

Flower: Species is monoecious; imperfect, both male and females are very small and appear in dense round clusters, typically a single cluster to a stalk, appearing with the leaves.

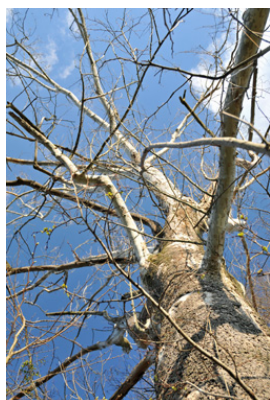
Fruit: A spherical multiple of achenes borne on a 3 to 6 inch stalk. Each seed is tiny, winged, and 1/2 inch long; maturing in November, disseminating in late winter.

Twig: Obviously zigzag, quite stout and orange-brown in color; leaf scar surrounds the bud and the stipule scar surrounds the twig; terminal bud is absent; lateral buds are reddish, resinous, with a single, cap-like scale.

Bark: Thin, mottled brown, green, tan and white; older stems are gray-brown and scaly. The most striking feature of this tree, often referred to as "camouflage" bark that readily exfoliates.

Form: A very massive tree with heavy, spreading branches with obviously zigzag twigs reaching up to and over 100 feet tall. In winter, the persistent fruits resemble Christmas tree ornaments.

Looks like: London plane tree - California sycamore - Arizona sycamore



Additional Range Information: *Platanus occidentalis* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - [USDAFS FEIS Silvics](#) - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

black walnut Juglandaceae *Juglans nigra* L.    symbol: JUNI

Leaf: Alternate, pinnately compound, 12 to 24 inches long with 10 to 24 leaflets (poorly formed or missing terminal leaflet), leaflets are ovate-lanceolate, finely serrate, and 3 to 3 1/2 inches long, rachis is stout and somewhat pubescent; yellow-green to green above, slightly paler below.

Flower: Species is monoecious; males are single-stemmed catkins, 2 1/2 to 5 1/2 inches long; females on short spikes near twig end, yellow-green in color, appearing in late spring.

Fruit: Round, 2 to 2 1/2 inches across, with a thick, green indehiscent husk. The husk contains an irregularly furrowed, hard nut that contains sweet, oily meat (edible), mature in late summer to fall.

Twig: Stout, light brown, with a buff-colored chambered pith; buds are tan, and large with a few pubescent scales; leaf scars are 3-lobed, resembling a "monkey face".

Bark: Brown on surface, darker brown when cut, ridged and furrowed with a rough diamond pattern.

Form: A medium to large tree up to 100 feet in height that develops a straight, clear bole with a narrow crown under competition, twigs and branches quite stout.

Looks like: butternut - Kentucky coffeetree - tree-of-Heaven - English walnut



Additional Range Information: *Juglans nigra* is native to North America. Range may be expanded by planting.

Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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Virginia Tech Dendrology

eastern cottonwood Salicaceae *Populus deltoides* W. Bartram ex Marshall   symbol: PODE3

Leaf: Alternate, simple, pinnately veined, 3 to 6 inches long, triangular (deltoid) in shape with a crenate/serrate margin. The petiole is flattened and glands are present at the top of the petiole.

Flower: Species is dioecious; male and female as pendulous catkins, appearing before the leaves.

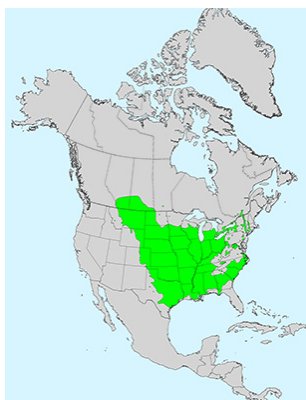
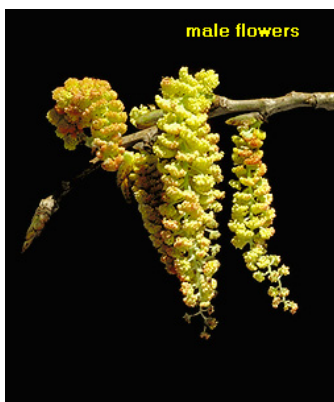
Fruit: Cottony seeds, 1/4 inch long borne in a dehiscent capsule, maturing over summer.

Twig: Stout, somewhat angled and yellowish; buds are 3/4 inch long, covered with several brown, resinous scales. Has a bitter aspirin taste.

Bark: Smooth, gray to yellow-green when young. Later turning gray with thick ridges and deep furrows.

Form: A large tree with a clear bole and an open spreading crown resulting in a somewhat vase-shaped form.

Looks like: bigtooth aspen - swamp cottonwood - black cottonwood - Fremont cottonwood



Additional Range Information: *Populus deltoides* is native to North America. Range may be expanded by planting. Download the full-size PDF map.

More Information: Fall Color - Wood - Landowner Factsheet

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - USDAFS Forest Products Lab

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Virginia Tech Dendrology

shagbark hickory Juglandaceae *Carya ovata* (Mill.) K. Koch    symbol: CAO2

Leaf: Alternate, pinnately compound, 8 to 14 inches long with 5 (sometimes 7) leaflets, lateral leaflets are obovate to lanceolate, terminal leaflets are much larger than the laterals, margins serrate and ciliate, rachis stout and mostly glabrous; green above and paler below.

Flower: Species is monoecious; male flowers are yellow-green catkins, hanging in 3's, 2 to 3 inches long; females are very short, in clusters at the end of branches, both appear spring.

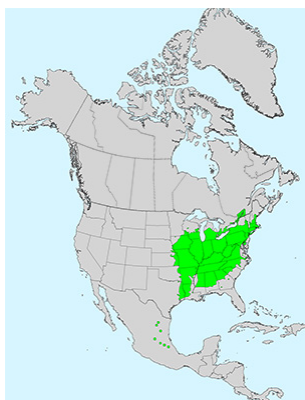
Fruit: Nearly round, 1 1/2 to 2 inches, with a very thick husk; nut is distinctly 4-ribbed, and the seed is sweet and delicious; maturing in fall.

Twig: Stout and usually tomentose, but may be somewhat pubescent near terminal bud, numerous lighter lenticels; leaf scars are raised, 3-lobed to semicircular - best described as a "monkey face"; terminal bud is large, brown, and pubescent, covered with 3 to 4 brown scales, more elongated than other hickories.

Bark: At first smooth and gray, later broken into long, wide plates attached at the middle, curving away from the trunk resulting in a coarsely shaggy appearance.

Form: A tall tree reaching over 120 feet tall with a straight trunk and an open round to oblong crown.

Looks like: shellbark hickory - red hickory - mockernut hickory - pignut hickory



Additional Range Information: *Carya ovata* is native to North America. Range may be expanded by planting.

Download the full-size PDF map.

More Information: Fall Color - Wood

External Links: USDAFS Silvics of North America - USDAFS FEIS Silvics - USDA Plants Database - Horticulture Information - USDAFS Forest Products Lab

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