

# Saginaw Forest – Stinchfield Woods Plant List and Guide

This guide lists many species that are found in the sites, and some that are not but that are found in surrounding areas.

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## *Acer negundo* box elder



**Species code:** ACENEG

**Family:** Aceraceae

**Leaf:** Opposite, 13-20 cm long, pinnately compound with 3 to 5 or more leaflets 5-10 cm long and 3-6 cm wide, long-pointed, coarsely toothed and often shallowly lobed.

**Flower:** Yellow-green, about 5 mm long, the male (staminate) flowers fascicled, the female (pistillate) flowers in drooping racemes; most trees are either male or female (the species is essentially dioecious), but bisexual flowers occur on a few trees (technically polygamo-dioecious).

**Fruit:** Fruits are winged nutlets (samaras) in a pair, 2.5-4 cm long, clustered on long

stalks.

**Twig:** Slender, shiny green, usually glabrous but sometimes hairy.

**Bark:** Light gray-brown with shallow fissures, becoming deeply furrowed.

**Form:** Grows to 20 m tall, with broad rounded crown, usually developing a shallow, fibrous root system.

## *Acer platanoides* Norway maple (non-native)



**Leaf:** Opposite, simple, and palmately-veined, 5 to 7 lobed with long pointed "teeth", exudes milky white sap from the petiole when detached, dark green above, paler below. A purple (nearly black) leaf variety known as Crimson King is widely planted.

**Flower:** Appear in early spring, before leaves; bright yellow-green in color, with male and female usually on different trees.

**Fruit:** Widely divergent 2-winged samaras, 1 1/2 to 2 inches long in clusters, relatively flat seed cavity, mature in late summer and persist into the winter.

**Twig:** Stout, brown with a large, turban-shaped, green to purple(fall and winter) terminal bud, large bud scales.

**Bark:** Gray-brown, a bit corky, on older trees shallowly furrowed with long narrow, somewhat interlacing ridges.

**Form:** Medium sized tree to 80 feet tall, usually with a dense rounded crown.

## *Acer rubrum* red maple



**Species code:** ACERUB

**Family:** Aceraceae

**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.

## *Acer saccharinum* silver maple



**Species code:** ACESAN

**Family:** Aceraceae

**Leaf:** Opposite, simple with 5 deeply palmate sinuses, lobe margins coarsely serrate, 2 1/2 to 5 inches long; light green above, pale, silvery white below.

**Flower:** Monoecious; greenish to reddish flowers appear in dense clusters in early spring long before leaves.

**Fruit:** Samara, largest of any native maple, divergent wings 1 1/2 to 2 1/2 inches long, germinate as soon as released, mature in late spring.

**Twig:** Similar to red maple but stouter and often more chestnut-brown in color, unpleasant odor when crushed; buds reddish brown with large scales, flower buds often in conspicuous dense clusters.

**Bark:** Light gray and smooth when young, when older breaks up into long thin strips, loose at ends. Similar to red maple but coarser.

**Form:** Can become quite a large tree reaching over 100 feet tall, trunk usually short, dividing into several subtrunks. Long slender branches sweep downward and then curve gracefully upwards.

## *Acer saccharum* sugar maple



**Species code:** ACESAC

**Family:** Aceraceae

**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.

## *Ailanthus altissima* ailanthus/tree of heaven



**Species code:** AILALT

**Family:** Simaroubaceae

**Leaf:** : Alternate, pinnately compound, 1 to 3 feet long, with 11 to 41 leaflets, leaflets are 2 to 6 inches long, pointed at the tip with large, glandular teeth near the base, green above and below.

**Flower:** Dioecious; small yellow-green, in long (6 to 12 inches)

clusters, males have a disagreeable odor, appearing in late spring to early summer.

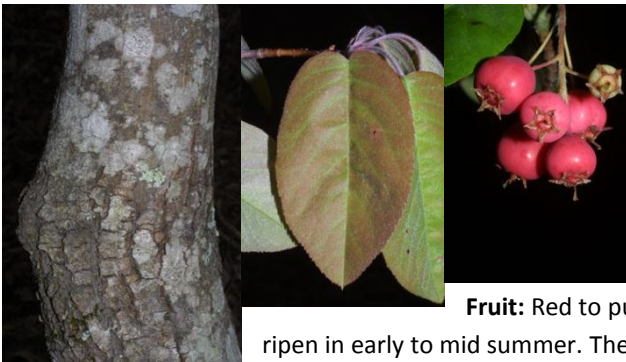
**Fruit:** An oblong, twisted samara, 1 to 1 1/2 inches long with the seed in the center, hanging in long clusters, ripens in late summer and disperse through the winter.

**Twig:** Stout, yellow to red-brown, with fine velvety hairs when young, easily broken with a large reddish brown pith; buds are relatively small and half-spherical sitting above large, heart-shaped leaf scars; terminal bud is absent. Strong odor (some are reminded of peanut butter) when broken.

**Bark:** Thin, light brown to gray, resembles the skin of a cantaloupe when young, later turning darker gray and rough.

**Form:** A short to medium sized tree to 70 feet with heavy, open branches. Lower branches on larger trees tend to droop. Often grows in clumps.

## *Amelanchier* spp. serviceberry



**Species code:** AMESPP

**Family:** Rosaceae

**Leaf:** Alternate, simple, ovate, 1 1/2 to 3 inches long, pinnately-veined, finely serrate, green above and paler below, may be pubescent below, particularly when young.

**Flower:** Showy with 5, long (1/2 inch) white petals, occurring in elongated, drooping bunches, appear in spring just before or with the leaves.

**Fruit:** Red to purple round berry, 1/4 to 3/8 inch in diameter, in small hanging clusters, ripen in early to mid summer. The fruits are edible and may be the best kept secret in the woods.

**Twig:** Slender, flexible, red-brown to gray in color, a few lighter scattered lenticels, may be covered with fine hairs when young; buds are long pointed, up to 1/2 inch long, covered with only a few scales, usually with hairy margins, light yellow-green to red in color, often slightly hooking around twigs.

**Bark:** Smooth when young, ashy-gray with darker stripes; later becoming rough with long vertical splits and furrows.

**Form:** A shrub or small tree up to 40 feet (occasionally much larger) with a narrow crown.

## *Aronia melanocarpa* black chokeberry



**Species code:** PYRMEL

**Family:** Rosaceae

**Leaf:** Alternate, simple, elliptical to obovate, 1 to 3 inches long, finely serrated margins, shiny dark green above, midrib has stiff, raised dark glands on upper surface (may need a hand lens), lacking pubescence below, orange-red fall color.

**Flower:** White, 5 petals, 1/2 inch across, dark anthers, occur in clusters at ends of twig, appearing in early summer.

**Fruit:** Small pome, 1/4 inch, black and shiny, ripen in late summer to early fall, somewhat persistent.

**Twig:** Slender, reddish brown, glabrous, terminal buds long, 1/3 to 1/2 inch (resembles serviceberry), leaf scars narrow.

**Bark:** Reddish brown, smooth, lenticeled, developing diamond-shaped splits.

**Form:** Upright shrub to 10 feet, readily suckers and is often multi-stemmed.

## *Aronia prunifolia* purple chokeberry



**Species code:** AROPRU

**Family:** Rosaceae

Very similar to *Photinia melanocarpa*, but larger. Red to purplish red fall foliage:

**Leaf:** Alternate, simple, elliptical to obovate, 1 to 3 inches long, finely serrated margins, shiny dark green above, midrib has stiff, raised dark glands on upper surface (may need a handlens), lacking pubescence below, orange-red fall color.

**Flower:** White, 5 petals, 1/2 inch across, dark anthers, occur in clusters at ends of twig, appearing in early summer.

**Fruit:** Small pome, 1/4 inch, black and shiny, ripen in late summer to early fall, somewhat persistent.

**Twig:** Slender, reddish brown, glabrous, terminal buds long, 1/3 to 1/2 inch (resembles serviceberry), leaf scars narrow.

**Bark:** Reddish brown, smooth, lenticled, developing diamond-shaped splits.

**Form:** Upright shrub to 10 feet, readily suckers and is often multi-stemmed.

## *Betula alleghaniensis* yellow birch



**Species code:** BETALL

**Family:** Betulaceae

**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:** 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.

## *Carya glabra* pignut hickory



**Species code:** CARGLA

**Family:** Juglandaceae

**Leaf:** Alternate, pinnately compound, 8 to 12 inches long, with 5 (sometimes 7) leaflets, leaflets are lanceolate and serrate, rachis slender and glabrous, green above and paler below.

**Flower:** Monoecious; males are yellow-green, drooping catkins, with three hanging from one stalk, 2 to 3 inches long; females are very short and found in clusters at the end of the branches, both appear in spring.

**Fruit:** Obovoid to pear-shaped, 1 to 2 inches long, with a thin husk that only partially splits upon maturation; nut is not ribbed, fairly round but flattened, seed is somewhat bitter; ripening in early fall.

**Twig:** Moderately stout to slender (when compared to the other hickories) and glabrous; leaf scars are 3-lobed to cordate - best described as a "monkey face"; terminal bud is small (1/4 inch), ovate and light brown in color.

**Bark:** Initially smooth, and light gray, soon developing scaly ridges; the bark on older trees has obvious close interlacing shaggy-topped ridges.

**Form:** A medium sized to large tree capable of reaching over 100 feet tall, with a rounded crown and a straight trunk.

## *Carya ovata* shagbark hickory



**Species code:** CAROVA

**Family:** Juglandaceae

**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:** 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.

## *Carya tomentosa* mockernut hickory



**Species code:** CARTOM

**Family:** Juglandaceae

**Leaf:** Alternate, pinnately compound, 9 to 14 inches long, with 7 to 9 serrate, lanceolate to obovate-lanceolate leaflets, rachis is stout and very pubescent, green above and paler below.

**Flower:** Monoecious; male flowers are yellow-green drooping catkins, with 3 hanging from one stalk, 3 to 4 inches long; female flowers are very small in clusters of 2 to 5 near the tip of the twig, both appear in spring.

**Fruit:** Obovoid to ellipsoidal in shape, 1 1/2 to 2 inches long, husk is thick (although less thick than *C. ovata*) and splits cleanly open, strongly 4-ribbed nut, with sweet and edible meat, matures in early fall.

**Twig:** Stout and pubescent, the 3-lobed leaf scars are best described as a "monkey face"; terminal bud is very large, broadly ovate (Hersey kiss-shaped), darker outer scales are deciduous in the fall, revealing a silky, nearly white bud.

**Bark:** Initially gray and smooth, later developing interlaced round-topped, light gray ridges and shallow, darker, furrows, never shaggy or exfoliating.

**Form:** A medium sized to large tree capable of reaching over 100 feet tall with a straight stem and a rounded crown.

## *Castanea dentata* chestnut



**Species code:** CASDEN

**Family:** Fagaceae

**Leaf:** Alternate, simple, oblong to lanceolate, 5 to 8 inches long, pinnately veined, sharply and coarsely serrated with each serration bearing a bristle tip, dark green above and paler below. Both sides are hairless.

**Flower:** Monoecious; many small, pale green (nearly white) male flowers found tightly occurring along 6 to 8 inch catkins; females found near base of catkins (near twig), appearing in late spring to early summer.

**Fruit:** Large, round spiny husk (very sharp), 2 to 2 1/2 inch in diameter, enclosing 2 to 3 shiny, chestnut brown nuts, 1/2 to 1 inch in diameter, mostly round but flattened on 1 or 2 sides ripen in early fall.

**Twig:** Moderately stout, hairless, chestnut- to orange- brown in color, numerous lighter lenticels; buds are orange-brown, 1/4 inch long, covered with 2 or 3 scales (they somewhat resemble a kernel of wheat), buds are set slightly off center from semicircular leaf scar.

**Bark:** Smooth and chestnut-brown in color when young, later shallowly fissured into flat ridges, older trees develop distinctive large, interlacing ridges and furrows. Blight infested bark is sunken and split, often with orange fungal fruiting bodies.

**Form:** Once a very tall, well formed, massive tree reaching over 100 feet tall. The chestnut is now found mostly as stump sprouts, less than 20 feet tall. Larger stems are often deformed by blight and sprouting below cankers.

## *Catalpa speciosa* catalpa



**Species code:** CATSPE

**Family:** Bignoniaceae

**Leaf:** Whorled (or opposite, when whorled one of the three leaves is often smaller), cordate, 5 to 12 inches long, pinnately veined, entire margins, overall soft and flexible feeling, light green to green above and soft pubescence on the underside.

**Flower:** Monoecious; very showy, white (yellow and purple spots on insides), 5 fuzzed petals form an overall bell shape, 1 inch long; appear in open, branched, upright terminal cluster (8 to 12 inches long) in late spring.

**Fruit:** Long (10 to 18 inches) bean-like, hanging capsules, round in cross section, very stiff; each capsule contains numerous flattened seeds with 2-papery, fringed wings; the seeds mature in autumn, but the capsule may remain attached over winter.

**Twig:** Stout, green, and later reddish brown in color, numerous lighter lenticels; terminal bud is absent, lateral buds are small and covered with red-brown scales; leaf scars very unique elliptical or round sunken saucers, light in color.

**Bark:** Gray to reddish brown, separated into irregular shallow fissures and scaly ridges.

**Form:** A medium sized tree to 80 feet with spreading, crooked branches and an irregular crown. The bole may be straight but is generally crooked.

## *Cornus alternifolia* alternateleaf dogwood



**Species code:** CORALT

**Family:** Cornaceae

**Leaf:** Alternate, simple, oval to ovate, 2 1/2 to 5 inches long, arcuate venation, leaves tend to cluster near branch tips so they may appear whorled or opposite, margins may be somewhat wavy, green above and paler below.

**Flower:** Monoecious; small, white, in flat-topped clusters, 2 to 4 inches across, appearing in late spring.

**Fruit:** Bluish-black drupe in clusters, (3/8 inch in diameter); fruit stalks turn reddish, ripen in late summer.

**Twig:** Slender, red to dark purple, pith white; terminal buds small (1/4 inch long), ovoid with two or three scales showing, leaf scars small and narrow; dead twigs turn a yellow-orange.

**Bark:** Smooth, dark green, streaky; eventually turns light brown and develops shallow fissures.

**Form:** Large shrub, may occasionally reach 30 feet tall; slender branches often horizontal with the ground; developing a flat-topped crown.

## *Cornus amomum* silky dogwood



**Species code:** CORAMO

**Family:** Cornaceae

**Leaf:** Opposite, simple, oval, 2 to 4 inches long, arcuately veined, margin entire, green above and maybe silky grayish when young, paler below.

**Flower:** Monoecious; small, white, in flat-topped clusters, 2

inches in diameter that appear in late spring and early summer.

**Fruit:** Berry-like drupes developing in flat-topped clusters, 1/4 inch in diameter, bluish with white blotches, maturing in late summer.

**Twig:** Red-purple (may be green-tinged), bearing silky gray hairs with a salmon colored pith, buds are narrow, pointed, hairy, sessile, and close to the stem.

**Bark:** At first red-purple (but may be green tinged); later turns brown and shallowly fissured.

**Form:** A small to medium sized, multi-stemmed, suckering shrub up to 10 feet tall. Branches may bend down and root in wet soil.

## *Cornus florida* flowering dogwood



**Species code:** CORFLO

**Family:** Cornaceae

**Leaf:** Opposite, simple, 3 to 5 inches long, oval in shape with an entire or slightly wavy margin, arcuately veined, green above and slightly paler below.

**Flower:** Monoecious; very small and inconspicuous tight cluster, but surrounded by 4 very showy, large, white (occasionally pink) bracts, 2 inches in diameter, appearing in mid-spring.

**Fruit:** A shiny, oval red drupe, 1/4 to 1/2 inch long, in clusters of 3 to 5, maturing in fall.

**Twig:** Slender, green or purple (purple on sunlit side), later turning gray, often with a glaucous bloom. The terminal flower buds are clove-shaped, vegetative buds resemble a dull cat claw.

**Bark:** Gray and smooth when young, turning very scaly to finely blocky.

**Form:** A small tree with a short trunk that branches low, producing a slightly rounded to flat-topped crown. Branches are opposite, and assume a "candelabra" appearance.

## *Cornus foemina* southern swamp dogwood



**Species code:** CORFOE

**Family:** Cornaceae

**Leaf:** Opposite, simple, ovate to elliptical, entire with arcuate veins, 2 1/2 to 5 inches long, dark green above, lighter below.

**Flower:** Monoecious; small, dull white in upright racemes, about 2

inches across appearing in late early summer.

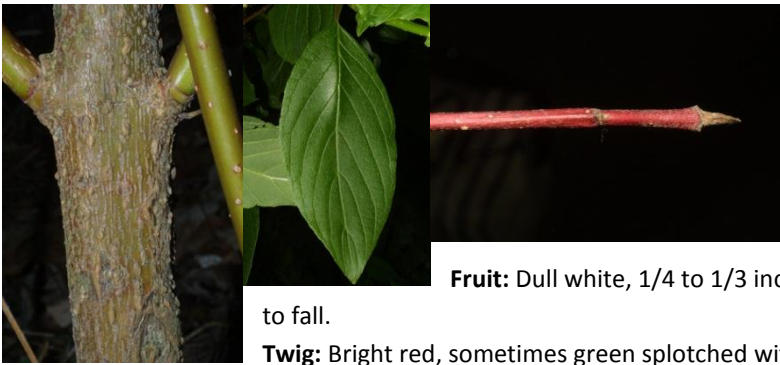
**Fruit:** Dull white, 1/4 to 1/3 inch in diameter in rounded clusters, maturing in late summer to fall, fruit stalks remaining red well into winter.

**Twig:** Slender, gray to reddish brown, buds are dark brown and valvate, bud scales sharp-pointed and appear to have frosted tips, pith very light brown.

**Bark:** Light ashy gray and smooth when young; becoming broken into irregular blocks.

**Form:** Small to medium sized shrub with numerous stems forming thickets up to 10 feet tall but generally shorter.

## *Cornus stolonifera* redosier dogwood



**Species code:** CORSTO

**Family:** Cornaceae

**Leaf:** Opposite, simple, arcuately veined, 2 to 4 inches long, somewhat narrow, entire margin, green above, pale below.

**Flower:** Monoecious; small, dull white in flat top clusters about 2 inches across appearing in late early summer.

**Fruit:** Dull white, 1/4 to 1/3 inch in diameter in rounded clusters. Maturing in late summer to fall.

**Twig:** Bright red, sometimes green splotched with red, white pith, buds narrow and tapering, flower buds more swollen.

**Bark:** Red to green with numerous lenticels; later developing larger cracks and splits and turning light brown.

**Form:** Small to medium sized shrub with numerous stems forming thickets up to 15 feet tall but generally shorter.

## *Corylus americana* American hazelnut



**Species code:** CORAME

**Family:** Betulaceae

**Leaf:** Alternate, simple, with a doubly serrated margin, broadly oval with a hart-shaped or rounded base, dark green above and paler below, 2 1/2 to 5 inches in length, petiole with stiff, glandular hairs.

**Flower:** Monoecious; males are light brown catkins (1 to 3 inch long) in clusters of two or three near branch tips, opening before leaves; females are inconspicuous with only bright red stigma and styles protruding from the

otherwise gray-brown buds, appearing as short, thin, red threads, early spring.

**Fruit:** Edible brown nuts (1/2 inch diameter) enclosed in a hairy, leaf-like husk with ragged edges; initially green, ripening to a brown in late summer.

**Twig:** Slender, zigzag, light brown, with numerous stiff, red-glandular hairs; buds blunt, small with few scales, two-toned, light grayish brown with scales near base being darker brown.

**Bark:** Light grayish brown and smooth, later develops a mild criss-cross netted pattern

**Form:** Small shrub, often in clumps reaching 12 feet in height.



## *Crateagus spp.* hawthorn



**Species code:** CRASPP

**Family:** Rosaceae

**Leaf:** Highly variable, but generally alternate, simple, 2 to 4 inches long, serrate and lobed (may be unlobed), subtending long thorns, dark green above and paler below.

**Flower:** Monoecious; perfect, usually small white flowers, with 5 petals produced in clusters near the end of the twig, appearing in mid to late spring.

**Fruit:** Small pomes, generally 1/4 inch in diameter, yellow to red when mature; maturing in the early fall.

**Twig:** Slender, gray in color, with true terminal buds that are usually dark, shiny red and round. Most species have obvious, stiff, 1 inch long thorns; leaf scars contain 3 bundle scars.

**Bark:** Smooth and gray-brown when young, later turning darker and scaly.

**Form:** Generally very dense shrubs or small trees up to 25 feet.

## *Elaeagnus umbellata* autumn olive (non-native)



**Leaf:** Alternate, simple, 1 to 3 inches long, 1 to 1 1/2 inches wide, lanceolate in shape with an entire margin. Leaves are green and distinctly scaly above, silvery and scaly below.

**Flower:** Bell-shaped, 1/2 inch long, very fragrant, lacking petals, yellow-white. Appearing in spring.

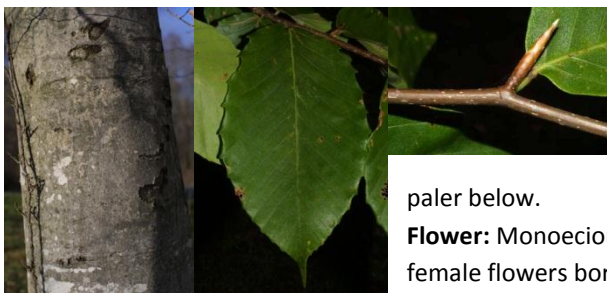
**Fruit:** Berry-like achene, red covered with silver scales, 1/4 to 1/3 inch long, sweet and juicy, matures in late summer.

**Twig:** Young branches are silvery and scaly, and may bear thorns, later developing a light brown color; buds are small, silvery-brown and rounded, covered with 4 scales.

**Bark:** Smooth and gray when young, becoming split and furrowed later.

**Form:** A shrub or very small tree to 15 feet, rounded in outline.

## *Fagus grandifolia* beech



**Species code:** FAGGRA

**Family:** Fagaceae

**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:** 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.

## *Fraxinus americana* white ash



**Species code:** FRAAME

**Family:** Oleaceae

**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:** 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.

## *Fraxinus nigra* black ash



**Species code:** FRANIG

**Family:** Oleaceae

**Leaf:** Opposite, pinnately compound, 7 to 11 sessile, serrated leaflets, whole leaf 10 to 14 inches long, dark green above, lighter below with tufts of brown hair.

**Flower:** Monoecious or with separate male and female trees, female flowers in loose panicles; males in tighter dense clusters, both appear before the leaves in early spring.

**Fruit:** Samara with a wide wing and an indistinct seed cavity, 1 to 1 1/2 inches long, borne in hanging clusters.

**Twig:** Stout, light brown to gray, opposite buds are nearly black, first lateral buds appear some distances below terminal, nearly circular leaf scar.

**Bark:** At first smooth, but becomes scaly to corky, gray-brown.

**Form:** Small to medium sized tree reaching up to 40 to 50 feet tall, usually with a slender crown.

## *Fraxinus pennsylvanica* green ash



**Species code:** FRAPEN

**Family:** Oleaceae

**Leaf:** Opposite, pinnately compound with 7 to 9 serrate leaflets that are lanceolate to elliptical in shape, entire leaf is 6 to 9 inches long, green above and glabrous to silky-pubescent below.

**Flower:** 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 single-winged, dry, flattened samara with a slender, thin seed cavity, maturing in autumn and dispersing over winter.

**Twig:** Stout to medium texture, gray to green-brown and either glabrous or pubescent, depending on variety; leaf scars are semicircular to flat across the top, with lateral buds sitting on top of leaf scar (not down in a notch as with white ash).

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

**Form:** A medium sized tree to 70 feet tall with a poorly formed bole and an irregular to round crown.

## *Hamamelis virginiana* American witch hazel



**Species code:** HAMVIR

**Family:** Hamamelidaceae

**Leaf:** Alternate, simple, broadly ovate to obovate, 3 to 6 inches long, inequilateral, wavy margin (nearly dentate), petiole pubescent, dark green above and paler below.

**Flower:** Monoecious; bright yellow, with 4, 1/2 to 3/4 inch long, very slender petals (look like yellow spiders on plant), appearing in mid to late fall.

**Fruit:** Woody, brown capsule, 1/2 inch long and nearly as wide, containing two shiny black seeds, 1/4 inch long, seeds are forcibly discharged when capsule splits open. Maturing in late summer and old capsules are persistent.

**Twig:** Slender, light brown, fine pubescence; light brown vegetative buds (1/3 inch) are stalked and lack scales (resemble a deer foot, they are actually a tiny folded leaf); flower buds are small, round and occur in tight clusters from short stalks.

**Bark:** Smooth, gray to gray-brown even on very old stems.

**Form:** A small tree or shrub with arching branches, usually growing in dense multi-stemmed clumps reaching up to 20 feet tall.

## *Ilex verticillata* winterberry holly



**Species code:** ILEVER

**Family:** Aquifoliaceae

**Leaf:** Alternate, simple, deciduous, margin sharply toothed, lance to egg-shaped (variable), glabrous and green above, paler and generally hairy below, 2 to 3 inches long.

**Flower:** Dioecious; both male and females are stalked and greenish-white with 5-7 petals, usually in clusters, appear in spring.

**Fruit:** Round drupes, 1/4 inch in diameter, reddish-orange to red in clusters of 2 to 4, ripening in fall but persisting through the winter, seeds smooth and smaller (1/8 inch long)

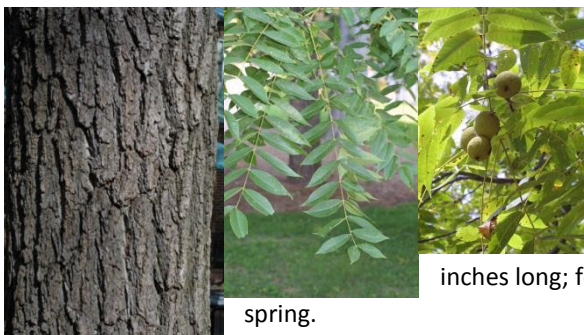
than *Ilex decidua* or *I. montana*.

**Twig:** Slender, gray, with scattered light lenticels, buds and leaf scars are small, one vascular bundle scar, tiny, black thorn-like stipules may be present on either side of the leaf scar.

**Bark:** Thin, smooth and grayish brown.

**Form:** Upright shrub with multiple stems, reaches heights of 10 to 15 feet.

## *Juglans nigra* black walnut



**Species code:** JUGNIG

**Family:** Juglandaceae

**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:** 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.

## *Juniperus communis* common juniper



**Species code:** JUNCOM

**Family:** Cupressaceae

**Leaf:** Persistent, linear-lanceolate (sword-like), about 1/3 to 1/2 inch long, and ternate (arranged in whorls of 3); white stomatal bloom above and green below; sessile (no petiole).

**Flower:** Mostly dioecious; rarely monoecious; male cones small, yellow and solitary; female cones small, round and solitary.

**Fruit:** Cones are small (about 1/4 inch diameter) and round with smooth, leathery scales; green when young and bluish black when mature, but always covered with white bloom, require 3 growing seasons to mature.

**Twig:** Slender, smooth, and often shiny; triangular between the nodes.

**Bark:** Mature bark is thin (less than 1/4 inch thick), shreddy, and red- to gray-brown.

**Form:** Most commonly grow as prostrate, mat-forming shrubs, but sometimes as upright shrubs or small trees.

## *Juniperus virginiana* red cedar



**Species code:** JUNVIR

**Family:** Cupressaceae

**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:** 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.

## *Larix decidua* European larch



**Species code:** LARDEC

**Family:** Pinaceae

**Leaf:** Deciduous, appearing singly on new growth and in whorls on older growth, 1 inch long, light green in color.



**Flower:** Monoecious; males light yellow, small and round; females yellow to red, with long, curved scales.

**Fruit:** Cones are 1 to 1 1/2 inches long, ovoid, composed of many scales that are longer than the bracts, borne upright on the twig, maturing fall to early winter.

**Twig:** Straw-colored, bearing rounded buds. Spur shoots present on older growth, buds dark brown.

**Bark:** On young trees the bark is scaly and gray, later becoming furrowed with a reddish brown inner bark.

**Form:** Well formed, with a straight stem, pyramidal

crown, and drooping lateral branches.

## *Larix laricina* tamarack

**Species code:** LARLAR

**Family:** Pinaceae

**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:** 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.

## *Larix×marschlinsii (europolis)* Dunkeld larch (hybrid larch)



**Leaf:** Deciduous, appearing singly on new growth and in whorls on older growth, 1 to 1 1/4 inches long, green to glaucous blue-green in color and turning yellow in the fall.

**Flower:** Monoecious; males light yellow, small and round; females yellow to red, with long, curved scales.

**Fruit:** Cones are 1 to 1 1/2 inches long, almost round, cone scales somewhat reflexed, flower-like in appearance, borne upright on the twig, maturing fall to early winter.

**Twig:** Gray-brown, bearing rounded buds. Spur shoots present on older growth.

**Bark:** On young trees the bark is scaly and gray, later becoming furrowed with a reddish brown inner bark.

**Form:** Well formed, and fast growing, with a straight stem and pyramidal crown, to 120+ feet. Lateral branches commonly droop.

## *Larix kaempferi* Japanese larch



**Species code:** LARKAE

**Family:** Pinaceae

**Leaf:** Deciduous, appearing singly on new growth and in whorls on older growth, 1 to 1 1/4 inches long, green to glaucous blue-green in color.

**Flower:** Monoecious; males light yellow, small and round; females yellow to red, with long, curved scales.

**Fruit:** Cones are 1 to 1 1/2 inches long, almost round, cone scales strongly reflexed, flower-like in appearance, borne upright on the twig, maturing fall to early winter.

**Twig:** Reddish brown to glaucous purple, bearing rounded buds. Spur shoots present on older growth.

**Bark:** On young trees the bark is scaly and gray, later becoming furrowed with a reddish brown inner bark.

**Form:** Well formed, with a straight stem and pyramidal crown. Lateral branches commonly droop.

## *Liriodendron tulipifera* yellow poplar



**Species code:** LIRTUL

**Family:** Magnoliaceae

**Leaf:** Alternate, simple, palmately veined, orbicular, 4-lobed with an entire margin, 4 to 8 inches long, notched to flat top. Somewhat shaped like a tulip, light green to green.

**Flower:** Monoecious; perfect, showy, resembling a large tulip, but high in the tree, 2 1/2 inches long, with yellow-green petals and an orange corolla, appearing in late spring to early summer.

**Fruit:** An oblong (cone-like) aggregate of samaras (2 inches long), deciduous at maturity; each samara is 1-winged, 1 1/2 inches long, and curved upwards at seed cavity (resembling the front keel of a boat); maturing August to October and disseminating through late fall and winter; base whorls of samaras persist on fruit into following spring and resemble wooden flowers high in the tree.

**Twig:** Red-brown in color, often with a shiny appearance or a waxy bloom. Stipules are large and encircle the twig; buds are elongated and valvate, resembling a "duck bill". Twigs have a sweet, spicy odor when broken.

**Bark:** Light gray-green and smooth when young, later developing flat-topped ridges and conspicuous white colored furrows in diamond shaped patterns. On older trees sapsucker holes are common.

**Form:** In a forest, a large tree with a long, straight limb-free bole very often reaching over 100 feet tall. Open-grown trees have a pyramidal crown when young, becoming oval in shape with time.

## *Lonicera dioica* mountain honeysuckle



**Species code:** LONDIO

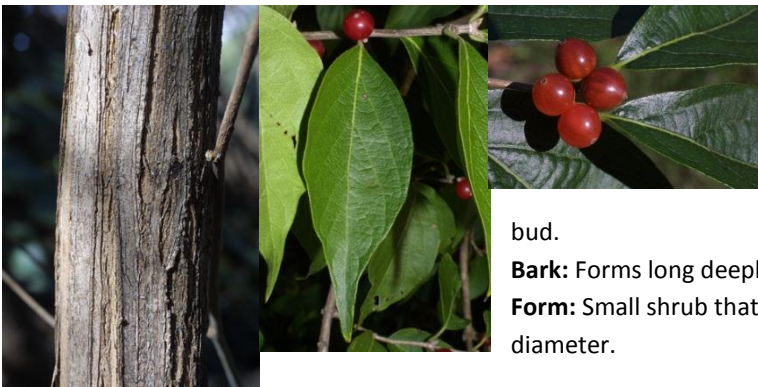
**Family:** Caprifoliaceae

Mountain honeysuckle is a low, climbing, vine-like shrub with branches arching or twining 3-10 ft. from the plant. Distinctive, red, tubular flowers with yellow stamens are arranged in whorls at the end of branches.

Red berries follow. Deciduous leaves are opposite, the uppermost pair being perfoliate. Fall foliage is yellow.

A semi-erect shrub or twining woody vine.

## *Lonicera maackii* Amur honeysuckle (non-native)



**Family:** Caprifoliaceae

**Leaf:** Opposite, simple, with acuminate tips, and somewhat arcuate venation.

**Fruit:** A red berry generally paired or in clusters, about one centimeter in diameter.

**Twig:** Pubescent and ashy light gray, with a conical pointed bud.

**Bark:** Forms long deeply grooved plates, light tan, the color of graham cracker.

**Form:** Small shrub that can form dense clonal stands with trunks a few centimeters in diameter.

## *Maclura pomifera* osage orange



**Species code:** MACPOM

**Family:** Moraceae

**Leaf:** Alternate, simple, pinnately veined, 2 to 5 inches long, oblong to ovate with an acuminate tip, margins entire, upper surface shiny.

**Flower:** Dioecious; not showy. Female is borne in dense, round, clusters. Male borne in subglobose racemes. Appearing late spring to early summer.

**Fruit:** A large, round multiple of drupes 4 to 5 inches in diameter, with a very distinctive citrus smell; the outer surface looks like "brains"; when crushed, a white, milky

juice is exuded, maturing in early fall.

**Twig:** Moderately slender, zigzag, green changing to buff or orange-brown. Twigs are armed with stout, unbranched thorns at each leaf scar. A milky sap is exuded when cut.

**Bark:** Orange-brown, developing scaly ridges with irregular furrows.

**Form:** A medium sized tree with a short trunk. The crown is irregular, with stiff, spiny branches.

## *Malus coronaria* sweet crab apple



**Species code:** PYRCOR

**Family:** Rosaceae

**Leaf:** Alternate, simple, elliptical to ovate, 1 1/2 to 3 inches, pinnately veined, finely serrated, sometimes borne on spur shoots, green above and paler, white pubescent below and on the petiole.

**Flower:** Monoecious; showy, may be white to red in color, with 5 petals for each flower; appear in the spring, usually in umbels.

**Fruit:** Pomes of various sizes and color (cultivar dependent) ranging from yellow to red when ripe in the fall.

**Twig:** Moderate in thickness, brown to gray, rapid growth usually gray hairy, generally many spur shoots; buds plump ovate, gray hairy.

**Bark:** Variable, generally smooth when young, later thin and scaly.

**Form:** Generally poor, with twisted trunks and low branching; spur shoots are prominent. When unpruned, numerous sucker shoots form along trunk and in crown.

## *Morus alba tatarica* Russian mulberry, white mulberry



**Species code:** MORALB

**Family:** Moraceae

**Leaf :** Alternate, simple, roughly orbicular in shape, 3 to 6 inches long with a serrate margin, often irregularly lobed, smooth above.

**Flower:** Normally Dioecious; small, green catkins, male flowers narrow, 1 to 2 inches long; female flowers plump, 1 inch long.

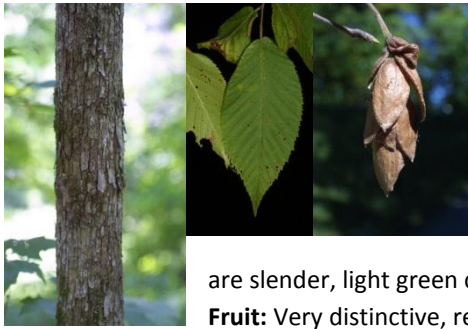
**Fruit:** Resembling blackberries, cylindrical, 1 to 1 1/4 inch long, fleshy multiple of drupes, pale pink to dark red, not as juicy as red mulberry, maturing in late summer.

**Twig:** Slender, zigzag, gray to orange-brown, smooth, buds reddish brown with numerous scales, scales often lack dark edges, leaf scar sunken oval, broken twigs display silvery white filaments.

**Bark:** Orange-brown with lenticels when young, becoming gray with long narrow irregular ridges.

**Form:** A small tree up to 40 feet tall, branches low and develops a wide spreading crown

## *Ostrya virginiana* hophornbeam



**Species code:** OSTVIR

**Family:** Betulaceae

**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:** 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.

## *Picea abies* Norway spruce



**Species code:** PICABI

**Family:** Pinaceae

**Leaf:** Evergreen needles, stiff, 1/2 to 1 inch long, 4-angled but somewhat flattened, with a sharp pointed tip, shiny deep green. Each needle borne on a raised, woody peg (sterigma).

**Flower:** Monoecious; males yellow-brown in large groups; females upright, purple.

**Fruit:** Cones are very large, cylindrical, 4 to 6 inches long, with stiff, thin scales that are irregularly toothed, chestnut brown, maturing in fall.

**Twig:** Slender to medium in size, lacking hair, shiny orangish brown; needles are borne on woody pegs; buds with very loose, orange-brown scales (resembles a rose).

**Bark:** Red-brown and scaly, later turning gray with flaking scales or plates.

**Form:** A medium to large tree with conical form capable of reaching over 120 feet tall, with horizontal to upward sweeping branches that often droop branchlets.

## *Picea glauca* white spruce



**Species code:** PICGLA

**Family:** Pinaceae

**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:** 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.



## *Pinus banksiana* jack pine



**Species code:** PINBAN

**Family:** Pinaceae

**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:** 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.

## *Pinus densiflora* Japanese red pine



**Species code:** PINDEN

**Family:** Pinaceae

**Leaf:** Evergreen needles in fascicles of 2, slender, twisted, 3 to 5 inches long, appear tufted on the branches, dark green, a common cultivar 'Oculus-draconis' is marked with two yellow bands.

**Flower:** Monoecious; males cylindrical, yellowish in clusters, females yellow-green to purple.

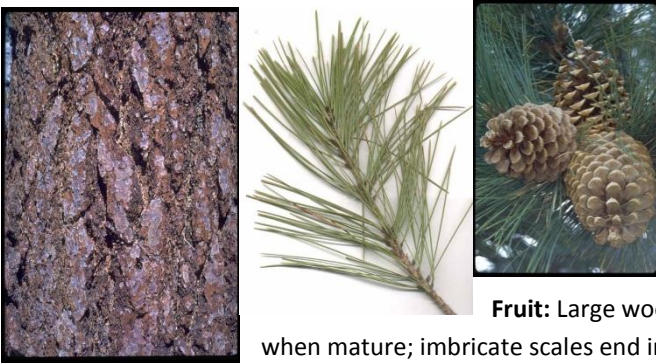
**Fruit:** Cones, singly or clustered, about 2 inches long, dull brown with a short spine.

**Twig:** Young stems are green and smooth, developing flaky orange-red appearance.

**Bark:** Upper crown bark is bright orangish and peeling, very similar to *Pinus sylvestris*, older bark develops plates and becomes gray.

**Form:** Small to medium sized tree that can reach heights of 80 feet or more (most seen in the landscape are much smaller), trunk is often leaning or wind swept looking, branches are typically horizontal.

## *Pinus jeffreyi* jeffrey pine



**Species code:** PINJEF

**Family:** Pinaceae

**Leaf:** Evergreen needles, 5 to 11 inches long, fascicles of 3 (occasionally 2), dark blue-green without bloom, often twisted, persist 5 to 8 years, bundle sheath is persistent.

**Flower:** Monoecious; very similar to ponderosa pine; male cones are long (up to 2 inches), cylindrical, red, and borne terminally; female cones are nearly round, red, and borne terminally.

**Fruit:** Large woody cone, 5 to 9 inches long; broadly egg-shaped and reddish brown when mature; imbricate scales end in a dorsal umbo with a distinctly recurved prickle.

**Twig:** Current year twigs are covered with a purplish white bloom that disappears with time; cut twigs have a sweet fruity odor.

**Bark:** Young bark is thin and scaly, brown to black in color. Mature bark is thick with broad, flat, scaly plates, orange-red to cinnamon-red in color, pineapple odor when cut. Bark is similar to ponderosa pine but often a bit redder.

**Form:** A large evergreen conifer growing 80 to 140 feet tall and 3 to 4 feet in diameter.

## *Pinus nigra* European black pine, Austrian pine, Corsican pine



**Species code:** PINNIG

**Family:** Pinaceae

**Leaf:** Evergreen needles, 4 to 6 inches long, flexible with two thick, dark green needles per fascicle.

**Flower:** Monoecious; males cylindrical, yellow, in large clusters along twigs; females oval, yellow to purple.

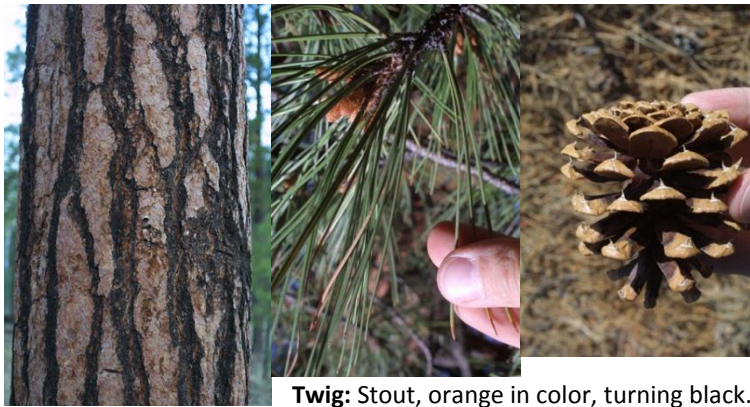
**Fruit:** Cones are ovoid, 2 to 3 inches long, yellow-brown; umbo is armed with a very short, minute prickle, maturing in the fall.

**Twig:** Quite stout, brown to gray in color with a large white, ovoid terminal bud.

**Bark:** Brown to gray, developing gray-brown ridges and dark brown furrows.

**Form:** A medium sized tree reaching up to 100 feet tall with a very dense crown (needles retained up to 4 years) that eventually develops a flat top.

## *Pinus ponderosa* ponderosa pine



**Species code:** PINPON

**Family:** Pinaceae

**Leaf:** Evergreen, 5 to 10 inches long, with three (sometimes 2) tough, yellow-green needles per fascicle. When crushed, needles have a turpentine odor sometimes reminiscent of citrus.

**Flower:** Monoecious; males yellow-red, cylindrical, in clusters near ends of branches; females reddish at branch tips.

**Fruit:** Cones are ovoid, 3 to 6 inches long, sessile, red-brown in color, armed with a slender prickle, maturing late summer.

**Twig:** Stout, orange in color, turning black. Buds often covered with resin.

**Bark:** Very dark (nearly black) on young trees, developing cinnamon colored plates and deep furrows.

**Form:** A large tree with an irregular crown, eventually developing a flat top or short conical crown. Ponderosa pine self-prunes well and develops a clear bole.

## *Pinus resinosa* red pine



**Species code:** PINRES

**Family:** Pinaceae

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

**Flower:** 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.

## *Pinus strobus* white pine



**Species code:** PINSTR **Family:** Pinaceae

**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:** 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.

## *Pinus sylvestris* scotch pine



**Species code:** PINSYL

**Family:** Pinaceae

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

**Flower:** 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.

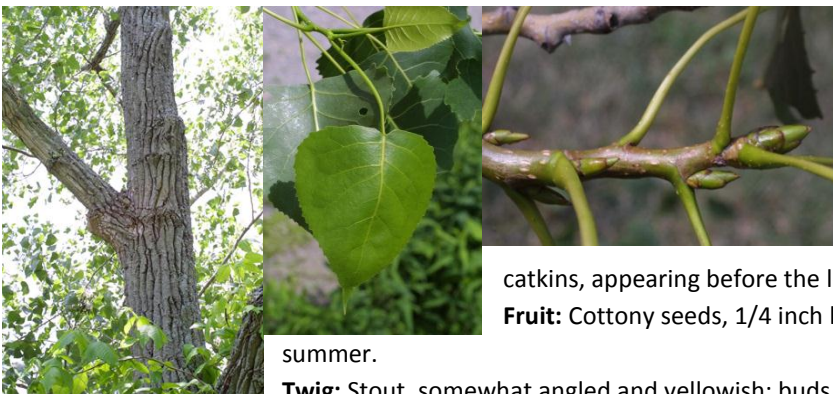
**Twig:** Moderately stout, green when young, changing to yellow-brown to olive-

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.

## *Populus deltoides* cottonwood



**Species code:** POPDEL

**Family:** Salicaceae

**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:** Dioecious; male and female as pendulous

catkins, appearing before the leaves.

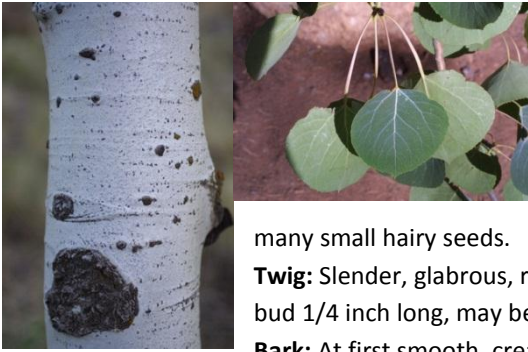
**Fruit:** Cottony seeds, 1/4 inch long borne in a dehiscent capsule, maturing over summer.

**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.

## *Populus tremuloides* quaking aspen



**Species code:** POPTRE

**Family:** Salicaceae

**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:** 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

## *Potentilla spp.* cinquefoil



**Species code:** POTSP

**Family:** Rosaceae

**Leaf:** Alternate, pinnately compound, with 5 (sometimes 3 or 7) leaflets that lack a petiole, overall 1 inch long, petiole may be silky-hairy, leaflets silky-hairy to glabrous, broadly lanceolate to ovate, with entire to revolute margins, dark yellow-green above and pale green below.

**Flower:** Buttercup-like, one inch across, Monoecious; bright yellow to creamy white, 5 petals, present from mid-summer to the end of the growing season.

**Fruit:** Compact head of hairy achenes, brown flower bases persist, late summer to early fall.

**Twig:** Reddish brown, slender, may be silky-hairy, becoming shreddy, single bundle scars, stipules persistent and partially covering the small buds.

**Bark:** Reddish brown and shreddy.

**Form:** A low mounding multi-stem shrub, to 6 feet, but at the northern edge of its range may closely hug the ground.

## *Prunus americana* American plum



**Species code:** PRUAME

**Family:** Rosaceae

**Leaf:** Alternate, simple, ovate to elliptical, finely serrated margin, sharply pointed tip, 3 to 4 inches long, green above, and slightly paler beneath.

**Flower:** White, 5 petals, 1 inch across, long filaments, yellow anthers, appear in small clusters in early spring with the leaves.

**Fruit:** Fleshy drupe, nearly round, 1 inch across, reddish purple to yellow-brown, some glaucous bloom, ripen in mid to late summer.

**Twig:** Slender, reddish brown, later developing an exfoliating gray film, leaf scars raised; buds reddish to gray and sharp pointed, some twigs becoming thorns.

**Bark:** Initially reddish gray, smooth with numerous horizontal lenticels, later becoming rough with irregular ridges and exfoliating curling strips.

**Form:** A multi-stemmed, shrubby, small tree with a spreading crown, reaching up to 30 feet tall with numerous rigid spiny branches; readily suckers from the roots.

## *Prunus avium* sweet cherry



**Species code:** PRUAVI

**Family:** Rosaceae

**Leaf:** Alternate, simple, 2 to 5 inches long, oval to obovate, serrated margin (slightly rounded teeth), obvious darkened glands on petiole, generally with more than 8 pairs of veins.

**Flower:** Showy, white, 1 inch across, 3 to 5 per cluster, appearing early spring.

**Fruit:** Sweet, dark red to nearly black drupe, 1/2 to 1 inch across, may be clustered on spur shoots; matures early to mid summer.

**Twig:** Medium textured, gray-brown, with a mild bitter almond taste; buds large (up to 1/4 inch), reddish brown; spur shoots present with multiple terminal buds.

**Bark:** Gray-brown, smooth, with prominent, long horizontal lenticels, often peels.

**Form:** A small to medium sized tree, generally to 50 feet, with a broadly rounded crown.

## *Prunus serotina* black cherry



**Species code:** PRUSER

**Family:** Rosaceae

**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.

## *Prunus virginiana* choke cherry



**Species code:** PRUVIR

**Family:** Rosaceae

**Leaf:** Alternate, simple, oblong to nearly oval, 2 to 4 inches long, finely serrated margin, dark green above and paler below, minute glands on petiole.

**Flower:** White, in a loose terminal raceme (3 to 6 inches long), appearing after leaves..

**Fruit:** Dark red to purple drupe, 1/3 inch in diameter, maturing in late summer.

**Twig:** Twigs slender, but stouter than black cherry, light brown to gray, strong unpleasant odor when broken, buds are 1/3 inch long covered with brownish scales.

**Bark:** Smooth, gray-brown, conspicuous lenticels that develop into shallow fissures, young stems have shallowly peeling, curling layers.

**Form:** Small, upright tree to 25 feet and 6 inches in diameter, often forming shrubby thickets.

## *Pseudotsuga taxifolia (mensiesii)* douglas fir



**Species code:** PSETAX

**Family:** Pinaceae

**Leaf:** Evergreen, single needles that lack woody pegs or suction cups, yellow-green to blue-green, 3/4 to 1 1/4 inches long, tips blunt or slightly rounded, fragrant.

**Flower:** Monoecious; males oblong, red to yellow, near branch tips; females reddish, with long bracts, occurring near branch tips.

**Fruit:** Very distinctive, 3 to 4 inches long with rounded scales. Three-lobed bracts extend beyond the cone scales and resemble mouse posteriors.

Maturing in late summer.

**Twig:** Slender and red-brown, with long, sharp, pointed, red-brown buds.

**Bark:** Smooth and gray on young stems, becoming thickened, red-brown with ridges and deep furrows.

**Form:** A pyramidal crown that is somewhat open and self-prunes poorly. Stems are characteristically straight.



very

## *Quercus alba* white oak



**Species code:** QUEALB

**Family:** Fagaceae

**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:** 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.

## *Quercus coccinea* scarlet oak



**Species code:** QUECOC

**Family:** Fagaceae

**Leaf:** Alternate, simple, 3 to 7 inches long, oval in shape with very deep sinuses and bristle-tipped lobes, shiny green above, paler and generally hairless below but may have tufts in vein axils.

**Flower:** Monoecious; males are borne on slender yellow-green catkins; females are borne on very short axillary spikes, both appear with the leaves in spring.

**Fruit:** Acorns are 1/2 to 1 inch long, with the cap covering 1/2 of the nut, cap scales are shiny, somewhat resembling a varnished black oak cap, scales on edges of cap generally not loose; the tip of the acorn may have

concentric rings or fine cracks; maturing in two years and ripening in the fall.

**Twig:** Moderately stout, red-brown with multiple terminal buds; buds reddish brown, plump, pointed, slightly angled, and covered with a light colored pubescence on the top half.

**Bark:** On young trees, gray-brown, with smooth streaks; later becoming darker and developing irregular broad ridges and narrow furrows especially near the base.

**Form:** A medium size tree reaching up to 80 feet tall with generally poor form, irregular crown, and many dead branches. A butt-swell is often noticeable, and often is useful in identification.

## *Quercus macrocarpa* bur oak



**Species code:** QUEMAC

**Family:** Fagaceae

**Leaf:** Alternate, simple, 6 to 12 inches long, roughly obovate in shape, with many lobes. The two middle sinuses nearly reach the midrib dividing leaf nearly in half. The lobes near the tip resemble a crown, green above and paler, fuzzy below.

**Flower:** Monoecious; male flowers are yellow-green, borne in long, drooping slender catkins, 2 to 4 inches long; female flowers are green tinged in red and appear as single, short spikes, both

appear shortly after the leaves.

**Fruit:** Acorns are quite large (1 1/2 inches long) and 1/2 enclosed in a warty cap that has a long-fringed margin, maturing in one growing season in late summer and fall.

**Twig:** Quite stout, yellow-brown, often with corky ridges; multiple terminal buds are small, round, and may be somewhat pubescent often surrounded by thread-like stipules; laterals are similar, but smaller.

**Bark:** Ashy gray to brown in color and quite scaly, but noticeably ridged vertically on large trees.

**Form:** A large tree that often reaches over 100 feet tall with a long clear bole. In the open it becomes a very wide, spreading tree.

## *Quercus rubra* red oak



**Species code:** QUERUB

**Family:** Fagaceae

**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:** 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.

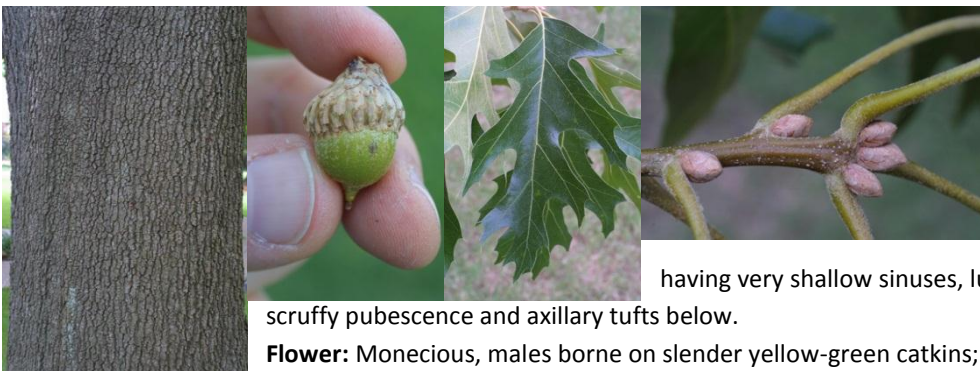
**Fruit:** Acorns are 3/4 to 1 inch long and nearly round; cap is flat and thick, covering about 1/4 or less of the acorn, resembling a beret; matures in 2 growing seasons, in late summer and fall.

**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.

## *Quercus velutina* black oak



**Species code:** QUEVEL

**Family:** Fagaceae

**Leaf:** Alternate, simple, 4 to 10 inches long, obovate or ovate in shape with 5 (mostly) to 7 bristle-tipped lobes; leaf shape is variable, with sun leaves having deep sinuses and shade leaves

having very shallow sinuses, lustrous shiny green above, paler with a

scruffy pubescence and axillary tufts below.

**Flower:** Monoecious, males borne on slender yellow-green catkins; females are reddish green and borne on short spikes in leaf axils, appearing in spring with the leaves.

**Fruit:** Ovoid acorns, 1/2 to 3/4 inch long, 1/3 to 1/2 enclosed in a bowl-shaped cap; cap scales are loosely appressed (particularly loose on edges of cap), light brown and fuzzy, matures in 2 years in late summer and fall.

**Twig:** Stout and red-brown to gray-green, usually glabrous but rapidly growing twigs may be hairy; buds are very large (1/4 to 1/2 inch long), buff-colored, fuzzy, pointed and distinctly angular.

**Bark:** At first gray and smooth, becoming thick and very rough, nearly black and deeply furrowed vertically with horizontal breaks. The inner bark is yellow-orange and very bitter tasting.

**Form:** A medium sized tree to 80 feet with an irregular crown and a tapering, somewhat limby bole.

## *Rhamnus cathartica* Common buckthorn/European buckthorn (non-native)



**Leaf:** Opposite or sub-opposite (partially alternate), simple, elliptical to nearly oval, 2 to 3 inches long, finely serrated, dark shiny green above, much lighter below.

**Flower:** Dioecious; small, yellow-green, 4 petals, in small clusters, appearing in spring.

**Fruit:** Round, 1/4 inch in diameter, drupe, shiny black when ripe in late summer.

**Twig:** Slender stiff, reddish brown, later with exfoliating gray layer, many end in a sharp thorn; buds, scaly, ovate, pointed, 1/4 inch, reddish brown to dark brown, appressed.

**Bark:** Smooth, shiny gray to reddish brown with numerous lenticels, later becoming dark gray and scaly; large specimens become rectangular blocky; inner bark is yellow.

**Form:** A large, suckering shrub or small low branching tree up to 25 feet tall.



## *Rhus glabra* smooth sumac



**Species code:** RHUGLA

**Family:** Anacardiaceae

**Leaf:** Alternate, pinnately compound, 12 to 18 inches long, 11 to 31 lanceolate leaflets per leaf, each 2 to 4 inches long with a serrated margin, dark green above, paler and finely hairy below.

**Flower:** Dioecious; small, with pale yellow petals, borne in a dense upright cluster up to 8 inches long, appearing in mid to late summer.

**Fruit:** A small (1/8 inch) reddish, round, finely hairy drupe borne in dense upright cluster. The panicles typically droop when mature in the fall and persist into winter.

**Twig:** Stout, lacking hairs and often with a bluish glaucous bloom; buds are small, rounded and covered with light brown hairs, nearly encircled by leaf scar.

**Bark:** Brown-gray and smooth, with numerous lenticels, developing scaly ridges with age.

**Form:** A shrub or small tree up to 10 feet with a short or multi-stemmed trunk and wide spreading, open crown.

## *Rhus typhina* staghorn sumac



**Species code:** RHUTYP

**Family:** Anacardiaceae

**Leaf:** Alternate, pinnately compound, 16 to 24 inches long, with 11 to 31 lanceolate leaflets with serrate margins each 2 to 5 inches long, rachis fuzzy; green above and paler below.

**Flower:** Often Dioecious; small, with yellow-green petals, borne on upright, dense terminal cluster up to 8 inches long, appearing in mid-summer.

**Fruit:** A round (1/8 inch diameter), red, fuzzy drupe; borne on upright dense clusters; mature in late summer, but persist through winter.

**Twig:** Stout, brown and very fuzzy (resembling deer antlers in velvet); buds are small, rounded and covered with soft, brown hairs, nearly encircled by leaf scar.

**Bark:** Remaining fuzzy for several years, turning gray-brown and smooth with numerous lenticels, much later becoming a bit scaly.

**Form:** A shrub or small tree to 25 feet, with a short, often poorly formed trunk and wide spreading very open crown. Branches repeatedly and widely fork.

## *Robinia pseudoacacia* black locust



**Species code:** ROBPSE

**Family:** Fabaceae

**Leaf:** Alternate, pinnately compound, with 7 to 19 leaflets, 8 to 14 inches long. Leaflets are oval, one inch long, with entire margins. Leaves resemble sprigs of grapes; green above and paler below.

**Flower:** Monoecious; perfect, showy and fragrant, white, 1 inch long and pea-like, borne in long (5 inches) hanging clusters, appear in mid to late

spring.

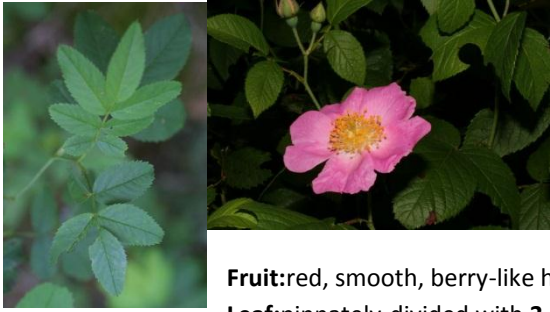
**Fruit:** Flattened legume, light brown, 2 to 4 inches long; containing 4 to 8 kidney-shaped, smooth, red-brown seeds, ripen in the fall.

**Twig:** Zigzag, somewhat stout and angular, red-brown in color, numerous lighter lenticels. Paired spines at each leaf scar (often absent on older or slow growing twigs); buds are submerged beneath the leaf scar.

**Bark:** Gray or light brown, thick and fibrous, heavily ridged and furrowed, resembles a woven rope.

**Form:** A medium sized tree to 70 feet, with a relatively straight trunk and a crown of crooked branches. Often forms thickets by root suckering.

## *Rosa carolina* Carolina rose



**Species code:** ROSCAR

**Family:** Rosaceae

**Plant:** erect, perennial, 1/2'-4' tall, clone-forming shrub usually **unbranched** or with only a few branches; stems with straight, slender, rounded **thorns near the nodes**

**Flower:** white to pink, 5-parted, 1 1/2"-2 1/3" wide, **on this year's stems**, the **sepals deciduous**; flowers solitary; blooms June-July

**Fruit:** red, smooth, berry-like hips

**Leaf:** pinnately-divided with **3-7** oblong to rounded, coarsely toothed leaflets **Habitat:** full sun; dry to moderate moisture; upland woods, prairies, inland sands, roadsides; in sandy, loamy soil

## *Rubus flagellaris* northern dewberry



**Species code:** RUBFLA

**Family:** Rosaceae

**Leaves** - Appearing to rise from the sides of the stem, alternate, trifoliate, petiolate, stipulate. Petioles to +/-3cm long, with few retrorse prickles, lanate, with single longitudinal dorsal groove. Stipules +/-1cm long, +/-5mm broad, entire or with a few coarse teeth, glabrous or sparse pubescent above, lanate below, margins ciliate. Leaflets 3. Lateral leaflets coarsely serrate, oblique at base, sessile, with sparse pubescence above, pubescent below. Terminal leaflet with stalk to 6mm long, broadest at or above the middle, base cuneate, sparse pubescent above, pubescent below, obovate to oblanceolate, coarse serrate.

**Inflorescence** - Terminal, few-flowered loose cymes. Pedicels to +/-4cm long, lanate.

**Flowers** - Petals 5, white, glabrous, distinct, spreading, to +/-2cm long, +/-1cm broad, obtuse at apex. Stamens many(+75). Filaments to +6mm long, white, glabrous. Carpels many. Hypanthium short, 1-1.5mm long, densely lanate. Sepals 5, narrowly ovate, green with whitish margins, densely lanate internally, lanate externally, subequal, to +6mm long, 3.5mm broad, apiculate, spreading to reflexed.

## *Rubus hispidus* bristly dewberry



**Species code:** RUBHIS

**Family:** Rosaceae

**Flowers & Fruits:** flowers with 5 white petals, 5 sepals; fruit a cluster of drupelets, sour when ripe

**Leaves:** alternate, fan-compound; 3-5 leaflets, undersides green

**Buds & Twigs:** leaf bases produce biennial canes which flower and fruit the second year; stems round, lacking whitish powder covering, with flexible, slender, bristles (2-4 mm long) which are usually not enlarged at base

**Shrub:** trailing canes lie flat on the ground; to 30 cm tall

## *Rubus idaeus* American red raspberry



**Species code:** RUBIDA

**Family:** Rosaceae

**Leaf:** Alternate, pinnately compound leaf with 3 to 7 serrated leaflets, 5 to 8 inches long, green above and nearly white below, very fine prickles or glandular hairs on petiole.

**Flower:** Greenish, with very small white petals that fall away quickly, not showy, appearing in late spring to early summer.

**Fruit:** Juicy, red, multiple of drupes, ripen in late summer, very tasty.

When picked they separate from the fleshy core forming a hollow shell.

**Twig:** Arching round "canes" that are bristly hairy to slightly prickly and reddish green. Canes do not root at the tips.

**Bark:** Brown and scaly on oldest canes.

**Form:** Arching canes that may reach 3 to 5 feet high, often forming dense tangles

## *Rubus occidentalis* black raspberry



**Species code:** RUBOCC

**Family:** Rosaceae

**Leaf:** Alternate, palmately compound, 3 to 5 inches long and wide, 3 to 5 leaflets with serrated margins, small prickles on petiole, light green above, and much paler (nearly white) below.

**Flower:** Monoecious; not showy, 5 small greenish white petals, appearing in late spring.

**Fruit:** Juicy, black, multiple of drupes, 1/2 inch across, ripen in midsummer. When picked they separate from the fleshy core forming a hollow shell.

**Twig:** Arching "canes" which generally live 2 years. Purplish-red with an abundance of white glaucous bloom and hooked prickles. Canes readily root at the tips when they contact the ground.

**Bark:** Similar to canes but darker and not glaucous.

**Form:** Arching canes may reach 3 to 5 feet high, often forming dense tangled thickets

## *Sambucus racemosa* red elderberry



**Species code:** SAMRAC

**Family:** Caprifoliaceae

**Leaf:** Opposite, pinnately compound, 6 to 12 inches long, with 5 to 7 lanceolate leaflets, apex pointed and margins serrate, dark green and smooth above and paler below.

**Flower:** Monoecious; perfect, tiny white flowers borne in large, upright, dome-shaped clusters; have a strong odor; appearing in late spring to early summer.

**Fruit:** Small (1/16 to 1/8 inch), usually red, berry-like fruits, borne in upright, dome-shaped clusters; unpalatable when raw (may be TOXIC to some) but edible when cooked.

**Twig:** Stout, soft, and with a large spongy pith, opposite buds and leaves. New sprouts may grow 10 to 12 feet in a single year.

**Bark:** Gray to dark reddish brown and covered with raised lenticels.

**Form:** Grows as an upright large shrub or small tree, commonly 8 to 20 feet tall.

## *Salix spp.* willow



**Species code:** SALSPP

**Family:** Salicaceae

**Leaf:** Alternate, simple, pinnately veined, lanceolate in shape, 3 to 6 inches long, with a finely serrate margin. Leaves are dark and shiny above, light green below.

**Flower:** Dioecious; flowers are tiny, green, borne on catkins, 1 to 3 inches long, early summer.

**Fruit:** Cone-shaped capsules that contain many small, cottony seeds, borne on catkins; capsules split at maturity, midsummer.

**Twig:** Slender, orange-brown in color, with a bitter aspirin taste; buds are small and appressed, covered by one bud scale, the terminal bud absent; stipules/scars are obvious.

**Bark:** Brown to gray-black, with thick, somewhat scaly ridges and deep furrows.

**Form:** A small to medium sized tree that can develop a massive trunk with a spreading, irregular crown. Black willows are often affected by crown gall, and witches brooms and trunk sprouting are common.

## *Sassafras albidum sassafras*



**Species code:** SASALB

**Family:** Lauraceae

**Leaf:** Alternate, simple, pinnately veined, ovate to elliptical, entire, 3 to 6 inches long with 1 to 3 lobes; the 2-lobed leaf resembles a mitten, the 3-lobed leaf resembles a trident; green above and below and fragrant when crushed.

**Flower:** 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 stalk, 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.

## *Sorbus aucuparia* European mountain ash



**Species code:** SORAUC

**Family:** Rosaceae

**Leaf:** Alternate, pinnately compound, 5 to 8 inches long, individual leaflets are serrated on their upper halves, 1 to 1 1/2 inches long, dull dark green above paler below.

**Flower:** Showy clusters of small white flowers, clusters 3 to 5 inches across, appearing in late spring to early summer.

**Fruit:** Clusters of bright deep orange small (3/8 inch in diameter) pomes, very showy, ripening in fall, persistent.

**Twig:** Moderate to stout, pubescent early, becoming shiny gray-brown later in season, spur shoot present, leaf scars narrow, buds 3/8 to 1/2 inch long, reddish brown with long gray pubescences.

**Bark:** When young, smooth with numerous lenticels, grayish brown, developing cracks, splits and scaly patches with age.

**Form:** A small tree up to 40 feet tall, crown is initially elliptical but becoming wider with age.

## *Spiraea alba* white meadowsweet



**Species code:** SPIALB

**Family:** Rosaceae

**Leaf:** Alternate, simple, finely serrated, narrowly lance-shaped, 2 to 3 inches long, green above, paler below.

**Flower:** Small, white, in narrow, upright terminal clusters (4 to 6 inches long), appearing in mid-summer.

**Fruit:** Narrow clusters of 5-parted dry capsules, persistent.

**Twig:** Slender, stiff, "wandlike", largely unbranched, reddish brown; leaf scar small and raised, 1 bundle scar.

**Bark:** Smooth, grayish to reddish brown eventually peeling off in fine strips.

**Form:** A multi-stemmed shrub to 4 feet tall.

## *Symphoricarpos albus* common snowberry



**Species code:** SYMALB

**Family:** Caprifoliaceae

**Leaf:** Opposite, simple, deciduous; variable in shape, generally oval, but may have entire or lobed margins (on the same plant); 3/4 to 2 1/2 inches long; green above and paler below.

**Flower:** Monoecious; perfect, small (1/4 inch), pinkish-white, and bell-shaped; occur in small terminal clusters, appearing in early summer.

**Fruit:** Round, white, waxy, and berry-like, up to 1/2 inch in diameter, often 3 to 5 per cluster; last well into winter. Inedible and commonly considered TOXIC.

**Twig:** Slender, smooth, yellow-brown; pith is hollow; opposite branching.

**Bark:** Tan to grayish brown and often splitting lengthwise on older stems.

**Form:** Finely branched, upright shrub reaching 6 feet tall.

## *Thuja occidentalis* northern white cedar



**Species code:** THUOCC

**Family:** Cupressaceae

**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:** 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.

## *Tilia americana* basswood



**Species code:** TILAME

**Family:** Tiliaceae

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

**Flower:** 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, unribbed 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

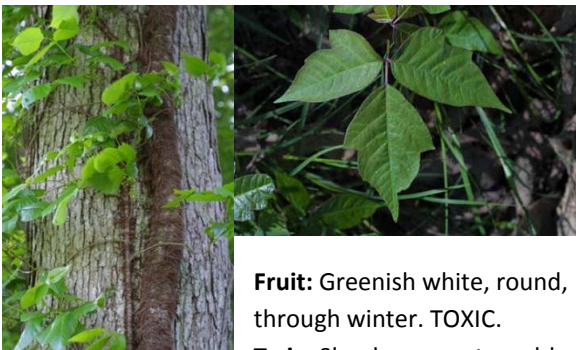
in the fall.

**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.

## *Toxicodendron radicans* poison ivy



**Species code:** TOXRAD

**Family:** Anacardiaceae

**Leaf:** Alternate, pinnately compound with 3 leaflets, 7 to 10 inches long, leaflets are ovate and irregularly toothed, shiny green above, paler below. TOXIC.

**Flower:** Monoecious; small, yellowish green, appearing in clusters, present late spring to early summer. TOXIC.

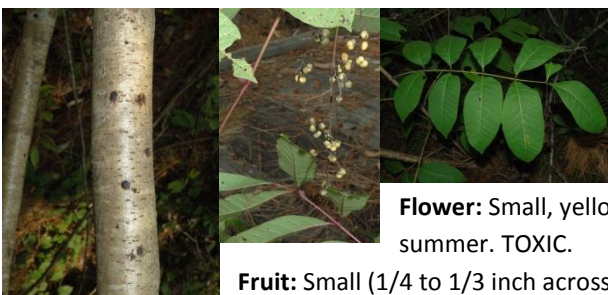
**Fruit:** Greenish white, round, 1/4 inch in diameter, borne in a hanging cluster, ripe in late summer and persist through winter. TOXIC.

**Twig:** Slender, gray- to red-brown, sparingly pubescent or glabrous, slender aerial roots present and older growth becomes densely covered and "hairy" in appearance; buds are stalked, naked, fuzzy brown, 1/4 inch long. TOXIC.

**Bark:** Dark gray, densely covered in aerial roots. TOXIC.

**Form:** May be present as a low (6 to 18 inches), spreading "carpet" on the forest floor, as a climbing vine, or as a bush.

## *Toxicodendron vernix* poison sumac



**Species code:** TOXVER

**Family:** Anacardiaceae

**Leaf:** Alternate, pinnately compound, 8 to 13 inches long, 7 to 13 shiny green, ovate leaflets (each 2 to 4 inches long), entire margins, dull green beneath. TOXIC.

**Flower:** Small, yellow-green in drooping, loose clusters in leaf axils, appearing in early to mid-summer. TOXIC.

**Fruit:** Small (1/4 to 1/3 inch across) round, white (initially shiny green) drupes in hanging clusters, ripen in late summer, persistent. TOXIC.

**Twig:** Stout, glabrous, orange brown, often mottled, numerous darker lenticels, leaf scar large and shield-shaped, buds with downy scales. Broken or cut stems exude a dark colored sap TOXIC.

**Bark:** Smooth, splotchy gray-brown with numerous darker, horizontally spreading lenticels. TOXIC.

**Form:** Small (up to 15 feet), upright tree with a few wide spreading branches, often sprouts near the base.

## *Ulmus americana* American elm



**Species code:** ULMAME

**Family:** Ulmaceae

**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:** Monoecious; small, in drooping clusters of 3 to 5, appear in early spring before leaf buds open.

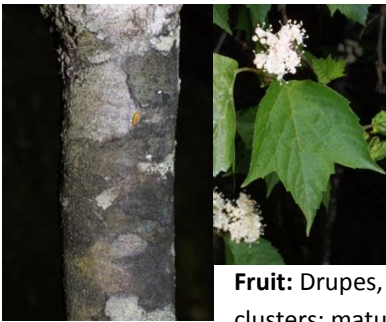
**Fruit:** Rounded, flat, papery, wafer-like samaras, 3/8 to 1/2 inch across, deeply notched at apex, hairless except for margin; ripen in spring.

**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.

## *Viburnum acerifolium* mapleleaf viburnum



**Species code:** VIBACE

**Family:** Caprifoliaceae

**Leaf:** Opposite, simple, suborbicular in shape, 3 to 4 inches long, 3-lobed, coarsely dentate, palmately veined with veins sunken on upper surface giving the leaf a slightly wrinkled look, pubescent below and on the petiole, green above and paler below.

**Flower:** Monoecious; very small, white, appearing in flat topped clusters 1 1/2 to 3 inches across appearing in early summer.

**Fruit:** Drupes, 1/4 inch in diameter, rounded, red turning purple to black when ripe, occur in flat topped clusters; maturing in fall.

**Twig:** Slender, velvety-gray; buds ovoid, stalked with 4 dark purple scales.

**Bark:** Smooth, grayish brown.

**Form:** An upright suckering shrub that often grows in dense clumps and reaches up to 5 feet tall.

## *Viburnum lentago* nannyberry



**Species code:** VIBLEN

**Family:** Caprifoliaceae

**Leaf:** Opposite, simple, finely serrated, ovate to elliptical, long pointed tip, 2 1/2 to 4 inches long, shiny dark green above, paler with tiny black dots beneath, petiole reddish, winged and wavy.

**Flower:** Small, white, occurring in round topped clusters, 3 to 5 inches across, appearing in spring.

**Fruit:** Dark blue, oval drupes, up to 1/2 inch long, occurring in hanging clusters from red stems, ripen in fall.

**Twig:** Slender, gray-brown; buds are valvate, slender, up to 1/2 inch long and pinkish brown, flower buds similar but appear swollen.

**Bark:** Gray-brown, initially smooth but later becoming irregularly scaly.

**Form:** A large shrub or small tree reaching up to 20 feet tall, with an open crown and arching branches.

## *Viburnum rafinesquianum* var. *affine* downy arrow-wood



**Species code:** VIBRAF

**Family:** Caprifoliaceae

A 3-6 ft. shrub, sometimes taller, with multiple straight stems in a loose habit. White, flat-topped flower clusters are followed by dark blue berries. Fall foliage is colorful.

Images in this guide are from the following sources and were collected between May 7-11, 2012:

Steve Baskauf – Bioimages

<http://www.cas.vanderbilt.edu/bioimages/frame.htm>

Amadej Trnkoczy, Charles Wilson Cook, Les Mehrhoff, Louis Landry, Mel Harte, Neal Kramer, and Ron Lance whose photos were downloaded from Discover Life

<http://www.discoverlife.org/>

Discover Life serves articles from numerous sources, notably for the images in this guide, CalPhotos

<http://calphotos.berkeley.edu/>

The content of this guide is from:

Barnes, B.V., and Wagner Jr., W.H. "Michigan Trees, Revised and Updated: A Guide to the Trees of the Great Lakes Region." 2004. University of Michigan Press. ISBN-10: 0472089218