FLOODPLAIN RESTORATION TREE SPECIES IDENTIFICATION

Box Elder (*Acer negundo*)

- **Leaves:** Opposite, pinnately compound, 3 to 5 leaflets (sometimes 7), 2 to 4 inches long, margin coarsely serrate or somewhat lobed, shape variable but leaflets often resemble a classic maple leaf, light green above and paler below. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** Green to purplish green, moderately stout, leaf scars narrow, meeting in raised points, often covered with a glaucous bloom; buds white and hairy, lateral buds appressed. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Height:** Up to 60'
- **Fruit:** Paired V-shaped samaras, 1 to 1 1/2 inches long, in drooping clusters, light tan when ripe in fall, persist throughout winter. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Flower:** Species is dioecious; yellow-green, in drooping racemes; appearing in spring. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type:** Fibrous root system. https://plants.usda.gov/plantguide/pdf/pg_acne2.pdf
- **Wetland classification:** Facultative (FACW): Equally likely to occur in wetlands and non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** Commonly found in bottomland rivers and heavily disturbed sites with wet soils. Has high tolerance to low oxygen conditions and even grows fast in clay and heavy fill. Full sun is best and it is only slightly tolerant to shading. https://plants.usda.gov/plantguide/pdf/pg_acne2.pdf
- **Wildlife uses:** The fibrous nature of the root system and its prolific seeding habit makes it useful for erosion control. During the winter the seeds provide an important food source for birds and small mammals while deer browse young plants. https://plants.usda.gov/plantguide/pdf/pg_acne2.pdf
- **Interesting facts:** Due to its rapid growth and tolerance to urban environments it was at one time planted in the U.S. along streets for aesthetic purposes. The former mentioned characteristics also make it useful in urban re-greening. Produces sap high in sugar content which is sometimes called "mountain molasses." (Additional information about native American uses) https://plants.usda.gov/plantguide/pdf/pg_acne2.pdf

Red Maple (*Acer rubrum*)

- **Leaves:** Opposite; 2.5-4” long and nearly as wide. Broadly ovate with 3 shallow short-pointed lobes (sometimes with 2 smaller lobes near base); irregularly and wavy saw-toothed, with 5 main veins from base; long red or green leafstalk. Dull green above, whitish and hairy beneath; turning red, orange, and yellow in autumn.
- **Twigs:** Reddish, slender, hairless.
- **Height:** 60 – 90 feet.
- **Fruit:** ¾- 1’’ long including long wing; paired forking keys; red turning reddish-brown; 1-seeded; maturing in spring.
- **Flower:** $^{1}/_{8}$ inches long; reddish; crowded in; nearly stalk less clusters along twigs; male and female in separate clusters; flower in late winter or very early spring before leaf foliage emerges.
- **Root system type**: At least 30 inches deep.
- **Wetland classification:** Facultative (FACW): Occurs in wetlands or non-wetlands of the Atlantic and Gulf Coast Plain Region.
- **Growing conditions:** Moist to wet sites; more common in upland areas and small river bottoms.
- **Wildlife uses:** Maple seed, in general, is used by song and game birds depending upon seed maturity; small mammals use browse, bark, buds; important squirrel food; good deer browse.
- **Interesting facts:** Pioneers made ink and cinnamon-brown and black dyes from a bark extract. It has the greatest north-south distribution of all tree species along the East Coast.

Silver Maple (*Acer saccharinum*)

- **Leave**s: Opposite, simple, deciduous; 5 palmate lobes; margins doubly toothed; silvery lower surface; red petioles.
- **Twigs:** 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.
- **Height:** 50 – 80 feet
- **Fruit:** 1.5-2.5 inches long including long broad wing; paired, widely forking keys; light brown, 1-seeded; maturing in spring
- **Flower:** ¼'' long; reddish buds turning greenish-yellow; crowded in nearly stalk less clusters; male and female in separate clusters; blooms in late winter or very early spring before leaves emerge.
- **Root system type**: At least 32 inches deep.
- **Wetland classification:** Facultative (FACW): Occurs in wetlands or non-wetlands of the Atlantic and Gulf Coast Plain Region
- **Growing conditions:** Silver maple is adapted wherever adequate moisture is assured, but grows best on well drained but moist river bottom soils. It is rarely found at higher elevations in the uplands. The brittle nature of its wood limits the longevity of the species where high winds or heavy ice accumulations are common. As a pioneer species, silver maple is shade intolerant.
- **Wildlife uses:** Silver maple is not notable for its attractiveness to wildlife, but as a source of fast shading, large woody debris, and litter in streams the species has few rivals. It seems to be a preferred nesting species for Baltimore orioles.
- **Interesting facts:** Its rapid growth makes Silver Maple a popular shade tree.

Smooth Alder (*Alnus serrulata*)

- **Leaves:** Alternate, simple, obovate to elliptical, 2 to 4 inches long, pinnately-veined, finely serrated wavy margin, dark green above, paler and finely hairy beneath
- **Twigs:** Reddish brown with gray fuzz, 3-angled pith; buds are stalked, plump, covered in 2 to 3 red-purple scales, resemble a match head
- **Height:** 8-12'
- **Fruit:** Woody, cone like catkin, 1/2-inch-long, dark brown with each scale enclosing a tiny, winged seed. Fruit ripens in fall and is very persistent.
- **Flower:** Species is monoecious; both males and females preformed; males green brown catkins, 1 to 1 1/2 inches; female 1/2-inch-long, reddish, opening in early spring
- **Root system type:** woody root system is spreading and shallow
- **Wetland classification:** Obligate Wetland (OBL) Almost always occur in wetlands

- **Growing conditions:** Grows best in wet bottomlands and stream margins, however it will also grow in well-drained upland areas. It is moderately shade and acid tolerant, but is weak-wooded and susceptible to wind and ice damage.
- **Wildlife uses:** Critical cover component of woodcock habitat; An intermediate source of food for wildlife; attracts birds
- **Interesting facts:** Smooth alder is used predominantly for streambank stabilization and wetland restoration.

Serviceberry (*Amelanchier canadensis*) (Shadblow, Canadian)

- **Leaves:** Alternate, simple, ovate, pinnately-veined, 1 1/2 to 3 inches long, finely serrate. Green above, may be pale pubescent below when young. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** Slender, flexible, red-brown in color, may be covered with fine hairs when young; buds may be up to 1/2-inch-long, pointed, covered with scales, may have hairy margins, light yellow-green to reddish yellow. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Height:** Grow up to 26'
- **Fruit:** Ripening in early to mid-summer, 1/4 to 3/8 inch in diameter, rounded, red ripening to dark purple or black when ripe, edible. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Flower:** Showy with 5 long (1/2 inch) strap-like white petals, borne on 3 inch racemes, appear before the leaves, in early spring. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type:** Shallow
- **Wetland classification:** Facultative (FACW): Equally likely to occur in wetlands and non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** Serviceberry is primarily found growing in bottomlands in swamps and thickets. It is a very adaptable species which is moderately tolerant to drought and salt conditions. It does well in soil which consists of a loamy sand that is well-drained and acidic. https://plants.usda.gov/java/
- **Wildlife uses:** Serviceberry blooms very early in relation to other species so plays an important role as a food source for pollinator insects such as bees and butterflies. The fruit is also relished by birds and wildlife. Orioles, cardinals, thrushes, catbirds, woodpeckers, waxwings, robins, squirrels, and chipmunks are all found browsing on the fruit. https://plants.usda.gov/java/

- **Interesting facts:** The short flowering period and sensitivity to temperature make it a useful indicator species for monitoring climate change. The fruit can be eaten raw or cooked and is good when made into jams and wine. Native Americans and colonists used the fruit to make Juneberry pies. Chippewa, Cherokee and other tribes took advantage of the medicinal properties of the rootbark to cure diarrhea, indigestion, excessive menstrual bleeding, and to expel worms. https://plants.usda.gov/java/

Yellow Birch (*Betula alleghaniensis*)

- **Leaves:** 3-5 inches long, 1.5-2 inches wide. Elliptical, short-pointed or rounded at base; sharply and doubly saw-toothed; mostly with 9-11 veins on each side; hairy when young. Dark dull green above, light yellow-green beneath; turning bright yellow in autumn.
- **Twigs:** 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.
- **Height:** 70 – 100 feet
- **Cones:** Cone like, 3/4 to 1 1/4 inches long, rather plump, upright, with many hairy scales containing 2-winged nuts, matures in fall and disperse over winter.
- **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.
- **Root system type**: At least 30 inches deep.
- **Wetland classification:** Facultative Upland (FACU): Usually occur in non-wetlands, but may occur in wetlands of the Atlantic and Gulf Coast Plain Region.
- **Growing conditions:** Yellow birch occurs on moist, well-drained soils of various types of uplands and mountain ravines and along stream banks and in swampy woods. It may also grow where drainage is restricted, but growth may be correspondingly poor.
- **Wildlife uses:** Seed is an important food source for many winter birds, including American goldfinch, pine siskin, northern junco, blue jay, and the chickadees and sparrows. Birches can also be important nesting sites for red-tailed hawks and vireos, as well as cavity nesting birds such as chickadees and woodpeckers.
- **Interesting facts**: One of the most valuable birches and one of the largest hardwoods in NE North America. Yellow birch lumber and veneer are used in making furniture, paneling, plywood, cabinets, boxes, woodenware, handles, and interior doors.

River Birch (*Betula nigra*)

- **Leaves:** Simple, alternate, deciduous; rhombic; doubly-serrate margin.
- **Twigs:** Slender, orange-brown in color, smooth or slightly pubescent, with the terminal bud absent. Lateral buds may be slightly pubescent. No wintergreen odor when cut.
- **Height:** 40 – 80 feet
- **Cones:** 1-1.5 inches long; cylindrical, brownish, upright, short-stalked; with many hairy scales and hairy 2-winged very small nutlets; matures late spring or early summer.
- **Flower:** Tiny; bloom in early spring. Male yellowish, with 2 stamens, many in long drooping catkins near tip of twigs. Female greenish, in short upright catkins back of tip of same twig.
- **Root system type**: At least 20 inches deep.
- **Wetland classification:** Facultative Wetland (FACW): Usually occurs in wetlands, but may occur in non-wetlands of the Atlantic and Gulf Coast Plain Region
- **Growing conditions:** This species is restricted to low and medium elevations, and is most common along streams. River birch is at home on somewhat poorly drained to well drained soils making it an easy choice for riparian buffers throughout the range of the species. River birch, like other pioneer species, is not particularly pH sensitive and seems to be tolerant of soils that are in the 4.5 to 7.5 range. It will occasionally develop iron chlorosis in soil with neutral and higher pH. River birch is shade intolerant.
- **Wildlife use**s: Its young twigs, buds and foliage are browsed by white-tailed deer; seeds are eaten by grouse, turkeys, small birds and rodents. Its spring ripening make it particularly valuable.
- **Interesting facts:** This is the southernmost New World birch and the only birch that occurs at low altitudes in the southeastern US.

Gray Birch (*Betula populifolia*)

- **Leaves:** 2-3 inches long, 1.5- 2.5 inches wide. Triangular, tapering from near base to long-pointed tip; sharply and doubly saw-toothed; usually with 4-8 veins on each side; leafstalks slender, with black gland-dots. Shiny dark green above, paler with tufts of hairs along mid-vein beneath; turning pale yellow in autumn.
- **Twigs:** Slender, orange-brown to gray in color with warty, raised lenticels that give the twig a rough feel; buds are slender, pointed, green and brown, terminal bud is lacking.
- **Fruit:** Cone like, cylindrical, 3/4-inch-long, deciduous at maturity, releasing tiny 2-winged nutlets. Matures in autumn, disperses over winter.
- **Flower:** Blooms in spring. Catkins are visible prior to blooming. Possess both male and female catkins (monoecious). Male's: 2 – 3.5 inches long; Borne singly, rarely in twos.
- **Root system type** At least 18 inches deep.
- **Wetland classification:** Facultative (FAC): Occur in wetlands and non-wetlands in the Atlantic and Gulf Coast Plain Region.
- **Growing conditions:** Gray birch is adapted to soils with poor and excessive drainage. However, it is much more common on dry, disturbed soils throughout much of its range. Gray birch is native to eastern Pennsylvania, New Jersey, and New York (roughly the I-81 corridor) to the Canadian Maritime Provinces. It is often in association with conifers such as white pine and scotch pine where seed sources exist. It is often the first tree species to invade disturbed droughty sites and tends to inhibit other vegetation by utilizing the available soil moisture and nutrients. Gray birch, as a pioneer species, prefers sites with ample sunlight and is shade intolerant. It is not tolerant of flooding of any significant duration.
- **Wildlife uses:** Bark serves as food source for beaver's and porcupines. Songbirds such as goldfinches consume ripe tree seeds. Sapsuckers consume sap and insects located within bark with they're specialized, brush-tipped tongue.
- **Conservation uses:** Gray birch is a "pioneer species" that can tolerate multiple soil conditions. It is able to be used in revegetation of mine spoils and other disturbed areas.
- **Interesting facts:** The Native Americans used the bark to prepare decoctions to treat swollen or infected wounds**.**

Ironwood, Hornbeam (*Carpinus caroliniana*)




- **Leaves:** Alternate, simple, elliptical to ovate, 3 to 5 inches long, pinnately veined, tip acuminate, doubly serrate margin; waxy, smooth green above, paler below. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** Slender, somewhat zigzag, brown to gray in color; buds are brown, angled, with a tan silky edge to each scale (making the buds appear lined), approximately 1/4 inch or less in length. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Height:** Up to 35'
- **Fruit:** Small ribbed nutlet carried on a 3-lobed, slightly folded leafy bract that is 1-inch-long (somewhat resembles a maple leaf), bracts are clustered on a long (4 to 6 inches) hanging stalk; ripen in late summer and fall, disperse through the winter. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Flower:** Species is monoecious; male catkins yellow-green, 1 to 2 inches long, hanging; female catkins yellow-green and fuzzy appearing from new branch tips, 1/2 to 3/4-inch-long, both appearing in mid to late spring. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type:** Woody root system is shallow and spreading. http://www.illinoiswildflowers.info/
- **Wetland classification:** Facultative (FAC): Equally likely to occur in wetlands and non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** American hornbeam is likely to be found in bottomland areas on well-drained slopes of rivers, lakes, swamps and ravines. It does best in moist, deep, well-drained acidic soils. It is not drought tolerant and grows best in partial shade. https://plants.usda.gov/java/
- **Wildlife uses:** The seeds, buds, and catkins are eaten by songbirds, ruffed grouse, ring-necked pheasants, bobwhite, turkey, fox, and gray squirrels. The leaves, twigs, and larger stems are consumed by rabbits, beaver, and white-tailed deer. Beaver frequently use hornbeam in the construction of dams and lodges. https://plants.usda.gov/java/
- **Interesting facts:** The wood is of little economic importance because of the small size of the trees. The wood is extremely hard and heavy and is used for making mallet heads, tool handles, levers. The pioneers used the wood for making bowls and dishes. https://plants.usda.gov/java/

Hackberry (*Celtis occidentalis*)

- **Leaves:** Alternate, simple, ovate, 2 to 5 inches long, serrated margin, pinnately veined, with acuminate tip and an inequilateral base, three distinct veins originate from base, maybe hairy or scruffy, green above and paler and somewhat pubescent below.
- **Twigs:** Slender, zigzag, light red-brown with numerous lighter lenticels; terminal bud is lacking, but a pseudo terminal bud is present. Lateral buds are small, tan, triangular, and appressed, pith is often chambered at the nodes.
- **Height:** Small to medium sized tree reaching up to 60 feet tall.
- **Fruit:** Round drupe, 1/4 to 3/8 inch in diameter, turning orange-red to dark purple when ripe, flesh is thin and quite dry but edible and sweet, enclosing a large pit, maturing in early fall.
- **Flower:** Species is monoecious; very small (1/8 inch), light green, produced on stalks from new leaf axils. Each flower with a 4 or 5 lobed calyx, appearing in spring.
- **Root system type:** Spreading, shallow to deep, depending on soils. Occasionally will have a strong taproot.
- **Wetland classification:** Facultative Upland (FACU). Usually occur in non-wetlands but occasionally found in wetlands.
- **Growing conditions:** Hackberry is commonly found on rich, moist sites along stream banks or on flood plains, but will perform well under more adverse conditions. It tolerates alkaline or acid soil conditions, full sun, and wind. It grows in winter hardiness zones 2 through 8. New growth is subject to spring frost injury. Common hackberry requires at least 14 inches of annual precipitation.
- **Wildlife uses:** Birds use the mature trees for nesting sites and feed on the fruit. Young stands also provide shelter for game birds, rabbits, and deer.
- **Interesting facts**: Native Americans valued common hackberry for medicinal, food, and ceremonial purposes. Medicinally, the bark was decocted to serve as a gynecological aid that could induce abortion, regulate menstrual cycles, and treat venereal diseases. Bark decoctions were also taken for sore throats.

Common Buttonbush (*Cephalanthus occidentalis*)


- **Leaves:** Opposite or whorled, elliptical, pointed tip, entire margins, 3 to 5 inches long, shiny dark green above. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** Slender to moderately stout, dark reddish brown, speckled with lighter, elongated lenticels; tips of twigs typically die back; lateral buds small and embedded in bark, leaf scar "D"-shaped or nearly round with a single "U"-shaped bundle scar. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Height:** 3-8’
- **Fruit:** Round cluster of nutlets (each 1/4'' long), dark brown, mature late summer to fall. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Flower:** Small, white tubular flowers occur in a dense round (1 inch across) cluster at the end of a slender 1 to 2-inch stalk, appear mid-summer. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type:** Branching and woody. http://www.illinoiswildflowers.info/trees/plants/buttonbush.htm
- **Wetland classification:** Obligate (OBL) – Occur almost always under natural conditions in wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** Buttonbush primarily resides in saturated soils near shorelines and swamps with full sunlight. It is not tolerant of shaded or dry soil conditions. https://plants.usda.gov/factsheet/pdf/fs_ceoc2.pdf
- **Wildlife uses:** Is used by honey bees for honey production. Seeds are eaten by ducks and other birds. Wood ducks also use the plant to protect their brooding nests. http://www.wildflower.org/plants/result.php?id_plant=CEOC2 https://plants.usda.gov/plantguide/pdf/pg_ceoc2.pdf
- **Interesting facts:** The common buttonbush is the only wetland shrub to possess whorled leaves and spherical-shaped flowers. It also has many interesting medicinal properties which were used by the Native Americans for various things including sore eyes, antidiarrheal agents, anti-inflammation and rheumatism medications, skin astringents, headache and fever relievers, and venereal disease remedies. It also contains the poison cephalathin which induces vomiting, paralysis, and convulsions if ingested. https://plants.usda.gov/plantguide/pdf/pg_ceoc2.pdf

Eastern Redbud (*Cercis canadensis*)



- **Leaves:** Alternate, heart shaped with broad short point, 2.5-4.5 inches long. No teeth with 5-9 main veins. Dull green above, paler and sometimes hairy beneath; turning yellow in autumn.
- **Twigs:** brown, slender, angled
- **Height**: 40’ (12m)
- **Fruit**: 2.5-3.25 inches long; flat narrowly oblong pods; pointed at ends; pink, turning blackish; splitting open on one edge. Several beanlike flat elliptical dark brown seeds.
- **Flower**: 0.5 inches long; pea-shaped, with 5 slightly unequal purplish-pink petals. 4-8 flowers in a cluster on slender stalks; in early spring before leaves.
- **Root System Type:** develops a deep taproot that grows quickly the first few years under conducive conditions; long and coarse with a relatively small number of fine feeder roots near the surface
- **Wetland classification:** Facultative Upland (FACU) Usually occur in non-wetlands, but may occur in wetlands
- **Growing conditions:** Moist soils of valleys and slopes and in hardwood forests. Endures shade, but prefers plenty of light.
- **Wildlife Uses:** The Henry’s elfin butterfly (Callophyrus henrici) and hummingbirds utilize eastern redbud for nectar. Honeybees use the flowers for pollen. Whitetail deer browse the foliage and twigs during the spring and summer. Squirrels occasionally eat the buds, bark, and seed. Bobwhite quail and songbirds eat the seeds. However, for the animals which utilize eastern redbud, it is considered a less desirable or emergency food. Livestock will infrequently graze on the foliage and twigs.
- **Interesting Facts:** Native Americans boiled the bark to make tea to treat whooping cough. Dysentery was treated using an astringent from the bark. The roots and inner bark were utilized for fevers, congestion, and vomiting. The flowers can be fried and eaten.

Atlantic White-cedar (*Chamaecyparis thyoides)*



- **Leaves:** Evergreen; opposite 1.5 - 3 mm long; scale like; dull blue-green with gland dot
- **Twigs:** Very slender, slightly flattened or partly 4-angled, irregularly branched, terminal twigs are arranged in fan-like clusters
- **Height:** 50 to 90 inches
- **Fruit/Cones:** Tiny, ¼" in diameter, bluish purple with a bloom, becoming dark red-brown; with 6 cone scales ending in a short point; 1-2 gray/brown seeds under cone scale
- **Flower:** Appear in March/April; Staminate flowers oblong, 1/8-inch-long with 10-12 stamens on shield-shaped filaments; Pistillate flowers are globular, 1/10 inch in diameter with 6 shield-shaped scales, each usually bearing two ovules.
- **Root system type:** Shallow root system; In swamps where the lower soil layers are permanently saturated with water, the roots are confined to the upper 1 to 2 feet of peat. At lower levels and where the soils are more deeply aerated, the roots often penetrate to greater depths. The small taproot formed during the first year is lost in the development of strong superficial lateral roots. Because of its characteristically shallow root system and weak root hold in the spongy organic soils, white-cedar cannot withstand severe winds, and many mature trees are felled in storms.
- **Wetland classification:** Obligate (OBL). Occur almost always under natural conditions in wetlands.
- **Growing conditions:** Wet, peaty, acidic soils; forms pure stands in swamp forests. Prefers swamps and marshes but will grow in dry locations as well
- **Wildlife uses:** Highly preferred food of deer during winter stress periods. It can easily be browsed out as seedlings or saplings with extensive damage done.
- **Interesting facts:** Pioneers viewed American White-cedar as prized wood to build durable log cabins. During the Revolutionary War, the wood produced charcoal for gunpowder. Ancient logs have been found buried in swamps with the wood still well preserved and suitable for lumber.

Sweet pepperbush (*Clethra alnifolia*)



- **Leaves:** Alternate, deciduous leaves. 1.5 – 4 inches long and 1 – 2 inches wide. Obovate shape with acute to acuminate tip. Serrate leaf margins. Green to dark green color. Late to leaf out in spring.
- **Twigs:** Slender and scruffy brown; buds with loose scales, the terminal is much larger than the laterals; leaf scar with one bundle scar.
- **Height:** 5 – 8 feet tall
- **Fruit:** The fruiting stalk has many miniature oval 3- seeded capsules that are winter-persistent and are good identification features
- **Flower:** Seventeen to one hundred fragrant flowers form the bottlebrush-like inflorescences that are about 10 cm long and 2 cm wide. Numerous, small white flowers held in racemes. Racemes are 3 – 5 inches long and 0.75 inches wide. Nicely fragrant. Blooms in July and August. Blooms on current seasons growth.
- **Root system type:** Fibrous, mat-like structure.
- **Wetland classification:** Facultative Wetland (FACW). Usually occur in wetlands but occasionally found in non-wetlands.
- **Growing conditions:** It grows naturally in poorly drained, moist soils and will get larger and produce more suckers if provided plenty of water. Once established, it can also thrive on drier, well-drained soils. The optimum soil pH is approximately 4.5. Coastal sweet pepperbush is moderately salt tolerant and can be grown near, but not directly behind, beaches
- **Wildlife uses:** The fragrant white flowers and nectar of coastal sweet pepperbush attract hummingbirds and butterflies. Deer eat it only when other forage vegetation is limited. Birds eat the fruit and aid in seed dispersal.
- **Interesting facts:** sometimes used to halt succession of tall trees along pathways. It has been planted following herbicide application along electrical transmission, telephone, railroad, roadside, and pipeline right of ways. Its low stature does not interfere with the general operations around these utility areas.

Silky dogwood (*Cornus amomum*)

- **Leaves:** Opposite, simple, oval, 2 to 4 inches long, arcuately veined, margin entire, green above and maybe silky grayish when young, paler below. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** 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. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36

- **Height:** 6-10’
- **Fruit:** Berry-like drupes developing in flat-topped clusters, 1/4 inch in diameter, bluish with white blotches, maturing in late summer. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Flower:** Species is monoecious; small, white, in flat-topped clusters, 2 inches in diameter that appear in late spring and early summer. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type:** Fibrous and thick
- **Wetland classification:** Facultative Wetland (FACW): Usually occur in wetlands but occasionally found in non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** Moist, slightly poorly drained and moderately acidic to neutral soils are best for the Silky Dogwood. Medium to course soil textures are best. It is very tolerant of shaded conditions but does not do well in drought-like conditions. https://plants.usda.gov/java/
- **Wildlife uses:** Erosion control and streambank stabilization and protection. Drupes are eaten by birds. http://hort.uconn.edu/detail.php?pid=376 Beneficial for fish and wildlife habitat improvement, and slope stabilization. https://plants.usda.gov/java/
- **Interesting facts:** The fruit of the dogwood is what is known as a drupe or stone fruit. Other examples of drupes are olives, peaches, plums, and cherries.

Gray dogwood (*Cornus racemos*)

- **Leaves:** Leaves are simple and opposite, 2 to 3½ inches long, ¾ to 1¾ inches wide, lance-elliptic, the tip tapered to a long, slender point, the base rounded or tapered to a ¼ to 2/3-inch stalk. The upper surface is dark green with 3 or 4 lateral veins per side, the lower pale green to nearly white, both surfaces with sparse, short, stiff, appressed hairs. Edges are smooth and often a bit wavy.
- **Twigs:** Twigs are tan to orange-brown, smooth but for a few dark, raised lenticels (pores) the first year that give it a warty texture. By the second year the bark has turned a dull but smooth brownish gray. Older bark lower on the lower stems can be rough and scaly. Stems are multiple from the ground, mostly straight and nearly simple with dense branching above. The spreading root system readily suckers, often creating large clonal colonies.
- **Height:** Typically up to 6 feet tall. May reach heights of 10 feet.
- **Fruit:** Fruit is a round, berry-like drupe, about ¼ inch diameter, white, often with a barely perceptible blueish flush, offset by vibrant red cluster stalks.
- **Flower:** Dome shaped clusters, 1½ to 2½ inches broad and about as high, of short-stalked flowers at the tips of branches. Flowers are creamy white, about ¼ inch across with 4 lance-

elliptic petals, the sepals minute or absent. The 4 stamens are about as long as the petals, spreading to ascending around the single green tipped style at center.

- **Root system type:** Root system produces clonal offsets from underground runners often called "suckers."
- **Wetland classification:** Facultative (FAC). Equally likely to occur in wetlands and non-wetlands.
- **Growing conditions:** Gray dogwood has a range of adaptability equaled by few other shrubs, and it tolerates many climatic conditions. Tolerance to shade is considered intermediate. It is not well adapted to coastal plain conditions
- **Wildlife uses:** Gray dogwood is useful as a low-growing wild hedge which provides summer food and some cover for small animals and birds. The nectar and pollen of the flowers attract a wide variety of insects.
- **Interesting facts:** The short-tongued bee Andrena fragilis is an oligolege (specialist pollinator) of dogwood flowers.

Redosier dogwood (*Cornus sericea*)

- **Leaves:** Opposite, simple, arcuately veined, 2 to 4 inches long, somewhat narrow, entire margin, green above, pale below.
- **Twigs:** Bright red, sometimes green splotched with red, white pith, buds narrow and tapering, flower buds more swollen.
- **Height:** Small to medium sized shrub with numerous stems forming thickets up to 15 feet tall but generally shorter.
- **Fruit:** Dull white, 1/4 to 1/3 inch in diameter in rounded clusters. Maturing in late summer to fall.
- **Flower:** Species is monoecious; small, dull white in flat top clusters about 2 inches across appearing in late spring to early summer.
- **Root system type:** Shallow, fibrous, spreads by stoloniferous branches.
- **Wetland classification:** Facultative Wetland (FACW) Usually occurs in wetlands, but occasionally in non-wetlands.
- **Growing conditions:** Adaptation: Redosier dogwood grows in soils that are saturated for at least a portion of the growing season. Redosier dogwood is common on the edges of lakes, ponds, within wetlands, and along streams. Not as tolerant of long-term root saturation as are some other shrubs, dogwood seems to prefer wetland margins where soils are nitrogen-rich, saturated, and shallowly inundated in the spring, and may be completely dry by late summer. It is tolerant of fluctuating water tables. The "osier" in redosier dogwood is derived from French, meaning "willow-like"; it is often called red willow because of its red stems.
- **Wildlife uses:** The fleshy fruits of dogwoods are very valuable to wildlife, particularly in the Northeast (Martin et al. 1951). The fruit ripens in late summer, and besides being available through the fall, some of the berries may persist on the plants into the winter months. Wildlife

browse the twigs, foliage, and fruits. Birds known to eat the fruit include: wood ducks, eastern bluebirds, cardinals, catbirds, longtailed chats, crows, purple finches, yellow-shafted flickers, crested flycatchers, grosbeaks, kingbirds, American magpies, mockingbirds, crested mynah birds, orioles, robins, yellow-bellied sapsuckers, European starlings, tree swallows, scarlet tanagers, brown thrashers, thrushes, vireos, pine warblers, cedar waxwings, and woodpeckers. Game birds who eat both the fruits and buds include grouse, ringnecked pheasants, band-tailed pigeons, greater prairie chickens, bobwhite quail, and wild turkeys. The shrubs provide excellent nesting habitat for songbirds. Mammals that eat the fruit and foliage include black bear, beaver, mountain beaver, cottontail rabbits, raccoons, eastern skunks, squirrels, chipmunks, mice, and rats. Deer, elk, Mountain goat, and moose browse the twigs and foliage.

- **Interesting facts:** Native Americans smoke the inner bark of redosier dogwood in tobacco mixtures used in the sacred pipe ceremony. Dreamcatchers, originating with the Potawotami, are made with the stems of the sacred redosier dogwood. Some tribes ate the white, sour berries, while others used the branches for arrow-making, stakes, or other tools

Persimmon (*Diospyros virginana*)

- **Leaves:** Alternate, simple, oblong to oval, 2 1/2 to 5 inches long, pinnately-veined, margin entire, lustrous green above and paler or whitened below. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** Slender, light brown to gray, maybe scabrous or pubescent; no true terminal bud and twig scar is often very prominent, buds triangular, appressed, dark red to black with 2 bud scales; leaf scar has one oval vascular bundle trace. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Height:** 30-70' http://www.illinoiswildflowers.info/
- **Fruit:** A plum-like berry that is green before ripening, turning orange to black when ripe, 3/4 to 2 inches in diameter, leafy bracts on top of fruit. The fruit is very astringent and mouth numbing when green, sweet and edible when ripe after a hard freeze; matures in mid to late fall. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Flower:** Species is usually dioecious; both white to greenish-white and about 1/2-inch-long; male flowers in 3's; female flowers solitary and urn-shaped, appear in late spring and early summer. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type:** Deep woody taproot. Long taproot makes it difficult to transplant http://www.illinoiswildflowers.info/
- **Wetland classification:** Facultative (FAC): Equally likely to occur in wetlands and non-wetlands of the Atlantic and Gulf Coast Plains Region.

- **Growing conditions:** Very adaptable species. It prefers to grow on the terraces of stream and river bottoms where the soil is moist and well-drained and consists of clays and heavy loams. However, it can do well in dry, sterile, sandy woodlands as well. https://plants.usda.gov/java/
- **Wildlife uses:** The fruit is eaten by many wildlife species including songbirds, turkey, bobwhite, crow, rabbit, opossum, raccoons and squirrels. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Interesting facts:** Persimmon fruits are edible and have even been cultivated for human consumption. The wood of the persimmon is commonly used for golf clubs because it is heavy, hard and shock resistant. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36

Winterberry holly (*Ilex verticillata*)

- **Leaves:** The simple, smooth, obovate to oblong-ovate foliage is sharply double toothed, with medium fine texture. The deciduous leaves are arranged alternately along the stems. Each leaf is 1 1/2 to 4 inches long, with dark green summer color turning yellow in fall, then drop off by mid-October.
- **Twigs:** 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.
- **Height:** Generally grows between 5-15 feet tall.
- **Fruit:** Scarlet red to orange, globular fruit mature by late summer, often remaining on the plant into mid-winter. The berrylike fruit is about 1/4 inch in diameter, occurring single or in pairs, each containing 3 to 5 small nutlets.
- **Flower:** Small, inconspicuous, axillary, greenish to yellowish white flowers bloom from April to July, after leaves have emerged. Like most others in the holly genus, winterberry is dioecious. Three years after planting, pistillate flowers begin to emerge in small clusters plants and staminate flowers develop on male plants with up to twelve flowers in a cluster; only now can plant gender be determined
- **Root system type:** Shallow, woody roots
- **Wetland classification:** Facultative Wetland (FACW). Usually occur in wetlands but occasionally found in non-wetlands.
- **Growing conditions:** This plant is often found at the edge of woods or in swamps. Adaptable to both light and heavy soils, but prefers moist, acidic, organic loams. Good tolerance for poorly drained soils including wet boggy or swampy conditions.
- **Wildlife uses:** The bright red fruit of this plant is eaten by small mammals and more than 48 species of birds.
- **Interesting facts:** While this fruit is a good source of food for wildlife, it is poisonous to humans.

Virginia Sweetspire (*Itea virginica)*



- **Leaves:** 1-4 inches; alternate, simple, oblong and serrated leaves on arching stems.
- **Twigs:** Young stems are light brown or green, while old stems are grey brown and striated, with small buds.
- **Height**: Up to 6 feet
- **Fruit:** Small woody capsules on a fruiting stalk are green changing to brown.
- **Flower:** White or cream, downward pointing. 4-inch-long fragrant inflorescences, looks like a bottlebrush.
- **Root System Type:** Woody and develops underground runners, forming clonal offsets
- **Wetland classification:** Obligate Wetland (OBL) Almost always occur in wetlands
- **Growing conditions:** Full sun to part shade, tolerates dry to moist to wet soil
- **Wildlife Uses:** This plant is moderately resistant to damage from deer. Flowers attract butterflies and other insects. Seeds eaten by songbirds.
- **Interesting Facts:** Genus name comes from the Greek word for willow in reference to the similarity of the leaves or flower clusters to those of some willows.

Spicebush (*Lindera benzoin*)



- **Leaves:** Alternate, simple, elliptical, 3 to 5 inches long, pinnately veined, entire margin that may be somewhat ciliate, strong, spicy odor when crushed, green above and slightly paler below.
- **Twigs:** Slender, olive-green to brown in color, numerous light lenticels, with distinctive, stalked globose buds covered with 2 to 3 yellow-green to brown scales; when broken, a spicy, peppery smell is obvious.

- **Height:** 3-9 feet tall.
- **Fruit:** A bright red drupe when ripe (green before ripening), 3/8-inch-long with a large seed and a peppery taste and scent, maturing in fall.
- **Flower:** Species is dioecious; small, but due to large numbers they can be showy, yellow, appearing in axillary clusters before the leaves in early spring.
- **Root system type:**
- **Wetland classification:** Facultative Wetland (FACW). Usually occur in wetlands but occasionally found in non-wetlands.
- **Growing conditions:**
- **Wildlife uses:** Over 20 species of birds, as well as deer, rabbits, raccoons, and opossums have been recorded as browsing the leaves or eating the fruits. The fruits are a special favorite of wood thrushes. The spicebush swallowtail, Papilio troilus (L.), lays its eggs on spicebush and other plants in the Laurel Family – sassafras, redbay, and camphortree.
- **Interesting facts:** Because of its habitat in rich woods, early land surveyors and settlers used spicebush as an indicator species for good agricultural land.

Sweet Gum (*Liquidambar styraciflua*)



- **Leaves:** Alternate, simple, palmately veined, orbicular, 4-6" across with 5-7 lobes (star shaped), and a finely serrate margin. Shiny green above and pubescent in the axils of the veins below, fragrant when crushed. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** Medium textured, shiny green to yellow-brown, usually with apparent corky outgrowths, particularly when fast growing. The terminal bud is large and is usually sticky, covered with green to orange-brown, shiny scales.
  http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Height:** 60-90'
- **Fruit:** Spiny "gumballs," woody brown spherical cluster of capsules, 1 to 1 ½ inches in diameter with openings in the surface that release 2 seeds from each capsule; maturing in fall.
- **Flower:** Monoecious; females borne on a slender stalk, capped with a globose head, male flowers borne on an upright raceme; both are small, bright yellow-green (tinged with red) and not showy, appear in early to mid-spring.
  http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type:** In dry areas, the root system consists of a well-developed taproot and lateral roots, while in soggy areas it consists of lateral roots that are shallow and widely spreading.
  http://www.illinoiswildflowers.info/

- **Wetland classification:** Facultative (FAC) – Equally likely to occur in wetlands and non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** A bottomland species that prefers sites with rich, moist soil. Is tolerant to a variety of soil conditions. Grows best in slightly acidic soils with a moderately coarse to fine texture. Very intolerant to shade but very tolerant of flooding. https://plants.usda.gov/java/
- **Wildlife uses:** Immature stems are eaten by mice and rabbits. Birds squirrels and chipmunks consume the seeds. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Interesting facts:** Hardened clumps of sap are exuded from wounds in the tree. These clumps of sap are where Sweetgum's name is derived. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36

Tulip/Yellow Poplar *(Liriodendron tulipifera)*



- **Leaves:** 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.
- **Twigs:** 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.
- **Height:** Often up to 100 feet tall.
- **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.
- **Flower:** 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.
- **Root system type:**
- **Wetland classification:** Facultative Upland (FACU). Usually occur in non-wetlands but occasionally found in wetlands.
- **Growing conditions:** Tulip poplar is exacting in soil and moisture requirements. It does best on moderately moist, deep, well drained, loose textured soils; it rarely grows well in very dry or very wet situations. It will tolerate a pH of 4.5 to 7.5.
- **Wildlife uses:** The nectar of the flower is used by hummingbirds, bees, and butterflies.
- **Interesting facts:** Yellow-poplar is the tallest hardwood tree in North America.

Sweetbay Magnolia *(Magnolia virginiana)*



- **Leaves:** 3-6 inches long, 1.25-2.5 inches wide. Oblong, blunt at tip, without teeth, slightly thickened; short stalked, becoming shiny green above, whitish and finely hairy beneath.
- **Twigs**: ring scars at nodes; ending in buds covered with whitish hairs.
- **Height:** 20-60’ (6-18m)
- **Fruit:** 1.5-2-inch-long, cone-like; elliptical; dark red; composed of many separate pointed fruits, each with 2 red seeds.
- **Flower:** 2-2.5-inch-wide, cup shaped, with 9-12 white petals; fragrant; in late spring and early summer.
- **Root System Type:** Large, flexible, rope-like roots which grow horizontally and stay relatively close to the soil surface
- **Wetland classification:** Facultative Wetland (FACW) Usually occur in wetlands, but may occur in non-wetlands
- **Growing conditions:** Wet soils of coastal swamps and borders of streams and ponds.
- **Wildlife Uses:** Magnolia seed ripens in mid-Autumn and is eaten and spread by songbirds, wild turkey, quail, and mammals such as gray squirrels and white-footed mice. Seeds are high in fat and are a good energy source for migratory birds. They are eaten by eastern kingbirds, towhees, mockingbirds, northern flickers, robins, wood thrushes, blue-jays, and red-eyed vireos. Sweetbay is also an important plant for attracting hummingbirds. Pollinators, especially beetles, are attracted to the pollen that is high in protein. It is a host plant for tiger swallowtail butterfly, palamedes swallowtail, spicebush swallowtail, and sweetbay silkmoth. Deer and cattle often browse the leaves. The leaves can contain up to 10% crude protein content and can account for 25% of a cattle’s browse in winter.
- **Interesting Facts:** Magnolias are one of the oldest tree species in the world The leaves were used as a spice in gravies and tea was made from the leaves and/or bark. It was used by physicians in the 18th century to treat diarrhea, cough, and fever, used by the Rappahannock in Virginia as a stimulant, and the Choctaw and Houma used it as a decoction to treat colds. It was also used to treat rheumatism, gout, malaria, and was even inhaled as a mild hallucinogen

Black Gum (*Nyssa sylvatica*)

- **Leaves:** Alternate, simple, pinnately veined, oblong to obovate in shape with an entire margin, 3 to 5 inches long, occasionally shallow lobes (or coarse teeth) near tip, dark green above and slightly paler below. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** Moderately stout, red-brown to gray, diaphragmed pith; 1 to 2 inch curved spur shoots are often present; buds ovate, pointed, green and light brown, but darkening to brown in the winter. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Height:** 40-80'
- **Fruit:** A dark, purplish blue drupe, 1/2-inch-long, with a fleshy coating surrounding a ribbed pit, ripen in late summer and fall. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Flower:** Species is usually dioecious; not showy, light green in color, in clusters hanging from slender stalks, appearing with the leaves. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type: f**leshy, non-fibrous
- **Wetland classification:** Facultative (FAC) – Equally likely to occur in wetlands and non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** This is a very adaptable species. Prime conditions include light-textured soils which are well drained. It can tolerate both periods of flooding as well as relatively dry conditions. https://plants.usda.gov/java/
- **Wildlife uses:** Many species including Black bears, foxes, wood ducks, wild turkeys, robins, woodpeckers, mockingbirds, brown thrashers, thrushes, flickers, and starlings eat the fruit. The twigs, foliage and young sprouts are eaten by white-tailed deer and beavers. Cavities in the tree also provide nesting sites for many bird and mammal species. https://plants.usda.gov/java/
- **Interesting facts**: Black Gum's foliage turns a brilliant red in the autumn. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36

Red Chokeberry (*Photinia pyrifolia*) (*Aronia arbutifolia*)




- **Leaves:** Alternate, simple, elliptical, 2 to 4 inches long, finely serrated margins, shiny dark green above, midrib has stiff, raised dark glands on upper surface (may need a handlens), much paler and fuzzy below, orange-red fall color. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** Slender, reddish brown, generally pubescent, terminal buds long, 1/3 to 1/2 inch (resembles serviceberry), leaf scars narrow. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Height:** Up to 15'
- Fruit: Small pome, 1/4 inch, reddish, ripen in late summer to early fall, persistent. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Flower:** White, 5 petals, 1/2 inch across, dark anthers, occur in clusters at ends of twig, appearing in spring. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type:** fibrous root system and spreads by suckers
- **Wetland classification:** Facultative Wetland (FACW) – Usually occur in wetlands but occasionally found in non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** Can be found in a variety of conditions ranging from dry hillsides to wet slightly swampy areas. It is tolerant to partial shaded conditions. It can tolerate both dry and wet soil types http://www.hort.uconn.edu/plants/detail.php?pid=55
- **Wildlife uses:** Can be used for bank stabilization http://www.hort.uconn.edu/plants/detail.php?pid=55 . The berries are of little importance to wildlife and are only occasionally eaten by birds and other species. http://www.wildflower.org/plants/result.php?id_plant=phpy4
- **Interesting facts:** It possesses some of the most brilliant fall foliage of any native shrub. The colors are raspberry to crimson, with purple highlights. Sometimes there is orange mixed in as well. http://www.hort.uconn.edu/plants/detail.php?pid=55 .

American Sycamore (*Platanus occidentalis*)

- **Leaves:** Alternate, simple, palmately veined, 4-8" wide, ovate in shape, with three to five lobes, margins coarsely toothed, petiole bases encircle and enclose buds, veins may be pubescent below. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Twigs:** 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. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Height:** 60-140' http://www.illinoiswildflowers.info/
- **Fruit:** A spherical multiple of achenes borne on a 3-6" stalk. Each seed is tiny, winged, and ½ inch long; maturing in November disseminating in late winter. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Flower:** Monoecious; imperfect, both male and females are very small and appear in dense round clusters, typically a single cluster to a stalk, appearing with leaves. http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=36
- **Root system type:** Woody root system widely spreading and branched.
- **Wetland classification:** Facultative Wetland (FACW) – Usually occur in wetlands but occasionally found in non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** Primarily a bottomland species found on a range of wet soil types. Normally found near rivers, shallow swamps and muddy flats. https://plants.usda.gov/java/
- **Wildlife uses:** Some songbirds consume the seeds during winter months. White-Tailed Deer will browse on the leaves and twigs but are not preferred by them. The base cavities of the sycamore can become large enough to house Black Bears. http://www.illinoiswildflowers.info/
- **Interesting facts:** The sycamore was used for a variety of medicinal purposes by the Native Americans. Some of these uses included cold and cough remedies, as well as dietary, dermatological, gynecological, respiratory, and gastrointestinal aids. https://plants.usda.gov/java/

Swamp White Oak (*Quercus bicolor*)




- **Leaves:** There is an alternate leaf arrangement. Leaves are 4 – 8" long by 2" – 4" wide and possess an obovate leaf shape with rounded lobes around the edge of the leaf. The underside of the leaf has white hairs. The adult leaf possesses a dark green color. http://hort.uconn.edu/detail.php?pid=376
- **Twigs:** Lower branches droop. The stems are yellowish brown http://hort.uconn.edu/detail.php?pid=376
- **Height:** 60 – 80 feet
- **Fruit:** Rounded acorn 0.5" – 1" in diameter. It usually grows in pairs off of an elongated peduncle (stalk which bears the acorn). Involucre covers approximately 1/3 of the acorn. http://hort.uconn.edu/detail.php?pid=376
- **Flower:** The male flowers are produced along drooping catkins (flowering spike of trees) about 2-4" long. Male flowers are sparsely distributed along the catkins in small clusters. Female flowers occur at the leaf axils (angle between main stem and leaf base) in clusters of 2-4. Blooming occurs in mid-late spring lasting 1-2 weeks. Flowers are pollinated via the wind. http://www.illinoiswildflowers.info/
- **Root system type:** Root system is usually shallow. https://www.na.fs.fed.us/spfo/pubs/silvics_manual/volume_2/quercus/bicolor.htm
- **Wetland classification:** Facultative Wetland (FACW) – Usually occurs in wetlands but occasionally found in non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions**: This tree grows well in conditions ranging from dry, poorly drained and wet, to even occasional flooded conditions. It will also tolerate significant soil compaction. https://plants.usda.gov/java/
- **Wildlife uses:** This tree provides cover for many bird and animal species. The sweet acorns of this tree are important food for wildlife such as squirrels, mice, white-tailed deer, beaver, black bear, and a variety of birds including game species such as ducks and turkey. https://plants.usda.gov/java/
- **Interesting facts:** Native Americans and pioneers would eat the acorns raw or cooked. When ground into a powder or a meal the acorns of this tree have been used to thicken stews, mixed with cereals to make bread and even roasted and steeped to brew a coffee substitute. https://plants.usda.gov/java/

Pin oak, Swamp Oak (*Quercus palustris*)

- **Leaves:** Alternate, simple, 3 to 6 inches long, oval in outline with 5 to 9 bristle-tipped lobes and irregularly deep sinuses that extend nearly to the midrib. Major lobes form a U-shape. Bright green above and pale below with axillary tifts.
- **Twigs:** Slender, red-brown in color and quite lustrous with multiple terminal buds that are small, pointed, and chestnut brown.
- **Height:** 70 – 90 feet
- **Fruit:** Acorns are 1/2-inch-long, striated, round (but flattened at the cap); thin and saucer-like cap, covered with red-brown appressed scales; matures after 2 years, dispersed fall to early winter.
- **Flower:** Species is monoecious; male flowers borne on slender, drooping yellow-green catkins; females reddish green borne on short spikes in new leaf axils, appearing in the spring with the leaves.
- **Root system type:** Shallow woody root system with numerous lateral roots**.** Young saplings develop strong tap-roots. As trees age root system becomes more shallow and fibrous.
- **Wetland classification:** Facultative Wetland (FACW): Usually occur in wetlands and non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions**: This tree grows under a wide range of site conditions, but is a true bottomland tree. It is seldom found growing above elevations of 800 feet, or on sloped ground. Pin oak grows in practically pure stands with good growth rates on wet, shallow sites with heavy soils that drain poorly. On better quality sites it will often grow larger, but is normally out competed by other species.
- **Wildlife uses:** The acorns of pin oak are used for forage by many bird species including Wood Duck, Mallard, Wild Turkey as well as mammals such as squirrels, mice, and muskrats. White-tailed deer occasionally browse on leaves and twigs of oaks. Commonly planted in lots for game forage. Provides nesting habitat as well.
- **Interesting facts:** The pin oak is very tolerant to urban stresses and thus has become a popular choice for planting in cities and other urban landscapes.

Willow Oak (*Quercus phellos*)




- **Leaves:** Alternate leaf arrangement. Simple, deciduous lanceolate shaped leaves. Leaves are not lobed. Length is 2-5". Possesses a bristle at the apex of the leaf. Mature leaves are dark green.
- **Twigs:** Stems are slender with a smooth reddish-brown bark.
- **Height:** 50-70 feet
- **Fruit:** Single acorn which is ≤0.5" in diameter. Cap is bowl shaped and striated with thin hairy scales which form reddish-brown and black bands.
- **Flower:** Blooming occurs for approximately 1-2 weeks in mid-spring. Male flowers are produced on drooping yellow catkins 2-3" in length. Central stalks of catkins are hairy. Female flowers are produced in groups of 2-3 near the tips of twigs.
- **Root system type:** Shallow and spreading root system.
- **Wetland classification**: Facultative Wetland (FACW) – Usually occur in wetlands, but may occur in non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** Adapted best to sunny or slightly shaded environments with moist, well-drained, acidic soils.
- **Wildlife uses:** Acorns are well liked by game animals and birds such as ducks, squirrels, deer, and turkey, blue jays and red-headed woodpeckers. The tree itself is used by grackles, flickers, mice and flying squirrels.
- **Interesting facts:** In the southern U.S. the willow oak is planted as an ornamental tree. It also has good pulping characteristics.
  http://dendro.cnre.vt.edu/LandownerFactsheets/detail.cfm?Genus=Quercus&Species=phellos

Northern Red Oak (*Quercus rubra)*




- **Leaves:** Leaves are deciduous, alternate, elliptic, 10–25 cm long and 8–15 cm wide, divided less than halfway to mid-vein into 7–11 shallow wavy lobes with a few irregular bristle-tipped teeth, sinuses usually extending less than 1/2 distance to midrib, glabrous and dull green above, light dull green below with tufts of hairs in vein angles
- **Twigs:** 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.
- **Height:** 20-30 meters
- **Fruit:** Acorns maturing in the second year, about 15–30 cm long, with a broad usually shallow cup, borne singly or in clusters of 2–5
- **Flower:** Male and female flowers are borne in separate catkins on the same tree (the species monoecious), the staminate catkins in leaf axils of the previous year's growth, the pistillate in 2–many-flowered spikes in the leaf axils; flowering occurs in April/May
- **Root system type:** strong taproot and network of deep, spreading laterals.
- **Wetland classification:** Facultative Upland (FACU) Usually occur in non-wetlands, but may occur in wetlands
- **Growing conditions:** Best growth is in full sun and well drained, slightly acidic, sandy loam.
- **Wildlife uses:** Northern red oak provides good cover and nesting sites (including cavities) for a wide variety of birds and mammals. Deer, elk, moose, and rabbits commonly browse leaves and young seedlings and the acorns are eaten by a wide variety of large and small mammals and birds.
- **Interesting facts:** Northern red oak is an important source of hardwood lumber. The wood is close-grained, heavy, and hard; it machines well and accepts a variety of finishes. It is used for furniture, veneer, interior finishing, cabinets, paneling, and flooring as well as for agricultural implements, posts, and railway ties

Fragrant Sumac *(Rhus aromatica)*

- **Leaves:** Deciduous, alternate, compound with 3 leaflets, variable in shape, lobing, and margin, the leaflets are unstalked, ovate to rhomboid, more or less wedge-shaped at the base, coarsely-toothed, usually shiny-glabrous above, the terminal leaflet 3-6.5 cm long; summer foliage green to glossy blue-green, turning orange to red or purple in the fall; leaves are aromatic when bruised
- **Twigs:** Smooth, there are no lenticels on the twigs, or they are very hard to see; the twigs have hairs, but the hairs do not have glands; twigs in winter can be brown, gray or red in color; aromatic when bruised
- **Height:** Typically grows 2-4' tall (less frequently to 6')

- **Fruit:** 5-7 mm in diameter, bright red at maturity and densely hairy, containing a single nutlet 3.8-4.5 mm long, in terminal clusters
- **Flower: Y**ellow, in small, dense inflorescences on short lateral shoots, opening before the leaves, bisexual and unisexual, both types borne on the same plant (the species polygamodioecious); male (staminate) flowers in yellowish catkins, female (pistillate) flowers in bright yellow, short panicles at the ends of branches
- **Root system type:** Fibrous, spreading; spreads by root suckers to form thickets in the wild
- **Wetland classification:** Obligate Upland (UPL), Nonhydrophyte, almost never occurs in wetlands
- **Growing conditions:** Easily grown in average, dry to medium, well-drained soil in full sun to part shade. Tolerant of wide range of soils except those that are poorly drained.
- **Wildlife uses**: The fruit is an important winter food for birds, including turkey, ruffed grouse, robins, and flickers, and for various small mammals (e.g., raccoon, opossum, chipmunk). The foliage is relatively unpalatable to most species of wildlife and domestic livestock. Thickets of fragrant sumac provide cover for many species of birds and small mammals.
- **Interesting facts:** American Indians made a tart drink ("Indian lemonade") from the ripe fruits of fragrant sumac (larger-fruited *Rhus* species provide a larger quantity of the same substance). The bark of all sumacs has been used as an astringent and leaves and bark can be used for tanning leather because of the high tannin content. Various Indian tribes have used fragrant sumac in treatment for various illnesses and health problems. The leaves, mixed with tobacco, were used as a smoking mixture.

Smooth Sumac *(Rhus glabra)*

- **Leaves:** It has alternate, compound leaves, 16-24 inches long. The leaflets are narrowed or rounded at the base and sharply pointed at the tip with finely toothed edges. The leaflets are dark green and smooth above, and pale beneath, except along the midrib**.**
- **Twigs:** Gray with whitish bloom; few; very stout; hairless
- **Height:** 10-15'
- **Fruit:** More than 1/8" in diameter, rounded, numerous, 1-seeded, crowded in upright clusters; dark red and covered with short sticky red hairs; matures in late summer remaining attached in winter
- **Flower:** Less than 1/8" wide with 5 whitish petals; crowded in large upright clusters to 8" long with hairless branches; blooms in early summer
- **Root system type:** Fibrous, spreading root system, suckering habit.
- **Wetland classification:** Not classified

- **Growing conditions:** Grows best in poor, well-drained soils, with partial to full sun. However, smooth sumac is a hardy species and will tolerate many soil types including soil that is slightly saline.
- **Wildlife uses:** Sumac serves primarily as a winter emergency food for wildlife. Ring-necked pheasant, bobwhite quail, wild turkey, and about 300 species of songbirds include sumac fruit in their diet. It is also known to be important only in the winter diets of ruffed grouse and the sharp-tailed grouse. Fox squirrels and cottontail rabbits eat the sumac bark. White-tail deer like the fruit and stems
- **Interesting facts:** The only shrub or tree species native to all contiguous 48 states. Widely used species among Native American tribes. The uses included the making of a root and leaf tea to treat diarrhea, dysentery, and mouth/throat ulcers. The leaves of the plant were smoked for asthma. The blossoms were used by the Chippewa in a mouthwash for teething children. Comanche children enjoyed the sour acid taste of the fruits and leaves were added to tobacco for smoking by adults. Dye was also created from various parts of the smooth sumac. The fruits were used to make red dyes and the inner bark used to make yellow dyes.

Swamp rose (*Rosa palustris*)

- **Leaves:** The leaves are alternate, pinnately divided into seven leaflets, the leaflets are pointed at the tip, toothed, hairy, up to 1½ inches long.
- **Twigs:** The stems are tall, 1-8 feet tall, with stout straight curved prickles.
- **Height:** Grows up to 7 feet tall.
- **Fruit:** The fruit (rose hip) is red and fleshy on the outside with a mass of seeds inside the rose hip.
- **Flower:** The flowers are pink, solitary or few in a cluster, and 1-2 inches broad. They generally bloom June through July.
- **Root system type:**
- **Wetland classification:** Obligate (OBL). Occur almost always under natural conditions in wetlands.
- **Growing conditions:** Swamp rose is common in marshes and swamps. This species is abundant in swampy habitats and along ditches and streams. It grows best in damp or wet rich loamy soil, in full sun or partial shade.
- **Wildlife uses:** The rosehips are eaten and spread by birds.
- **Interesting facts:** The Cherokee used an infusion (a tea) made from the bark and/or roots from swamp rose to treat worms, diarrhea, and dysentery.

Pussy Willow (*Salix discolor*)

- **Leaves:** Alternate leaf with a length ~4" and width ~1 ½ ". Ovate to narrowly ovate shape and irregularly crenate-serrate to almost smooth along edges. Upper leaf surfaces medium to dark green without hair. Undersides are hairless, glaucous, and whitened.
- **Twigs:** Smooth with reddish-brown to brown coloration. Actively growing stems are yellowish green to light green. http://www.illinoiswildflowers.info/
- **Height:** 6-20'
- **Fruit:** Seed capsules about 1/3" (6-8 mm.) long. Brown color. Split open in summer to release cottony seeds. http://www.illinoiswildflowers.info/
- **Flower:** Dioecious. Developing male catkins covered with dense silky gray hairs. Mature 1" long and yellowish color from many stamens. Each floret has 2 stamens. Female catkins spike-like racemes of female florets. Greenish catkins grow 1-4" long when mature. Each floret has a pistil with a pair of tiny stigmata at the tip. http://www.illinoiswildflowers.info/
- **Root system type:** Woody, branching, and shallow.
- **Wetland classification:** Facultative Wetland – Usually occur in wetlands but occasionally found in non-wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** Prefers moist soils and is rarely found beyond the water's edge in forest communities. Pussy willows are shade intolerant.
- **Wildlife uses:** The nectar and pollen attract small bees and flies. Caterpillars of butterflies, skippers, moths and other insects feed on the leaves and branches. These insects are important sources of food to various birds. Ruffed Grouse, tree squirrels, wood turtles, muskrats, rabbits and deer also feed on various parts of this tree. It is also used as cover for nesting birds. Used by beavers in construction of dams and lodges.
- **Interesting facts:** During the Chinese new year pussy willows are often displayed to symbolize growth and prosperity for the new year. They are also associated with Easter and used as decoration on Palm Sunday. https://funflowerfacts.com/2013/03/28/all-about-pussy-willows/

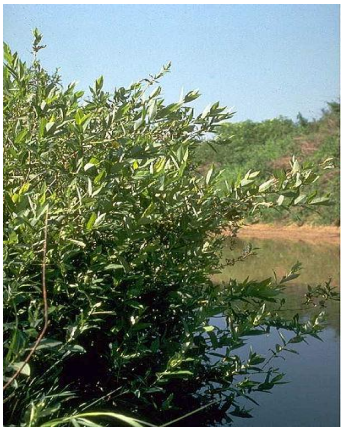
Sandbar willow (*Salix interior*)


- **Leaves:** Leaves are 2-5” long with a narrow lance shaped profile that is pointed at both ends. The margins have shallow widely spaced teeth. Leaf coloring on both sides of leaf is generally green and sometimes silvery. Leaf texture is smooth to silky.
- **Twigs:** Reddish-brown in color with a smooth texture.
- **Height:** 3-20’
- **Fruit:** Produces white loculicidal capsules.
- **Flower:** Plant is dioecious (male and female flowers on different plants). Produces flowers in catkins 0.6-4” long. Catkins are first produced with or just after leaves.
- **Root system type:** Fibrous root system. Roots are woody and spreading forming an extensive root system. Categorized as both “deep rooted” and shallow rooted. https://www.fs.fed.us/database/feis/plants/shrub/salexi/all.html
- **Wetland classification:** Obligate Wetland – occur almost always under natural conditions in wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** It is adapted to sandy soils in stream, river, and shorelines. It is not well adapted to other soil conditions. It is very shade intolerant.
- **Wildlife uses:** Used for erosion control in streambank and lakeshore stabilization and riparian area development or restoration. Provides wood and shelter for many game birds as well as forage for deer.
- **Interesting facts:** The sandbar willow is both drought and flood resistant. It can withstand flooding conditions for periods of 2 or more growing seasons.

Black Willow (*Salix nigra*)

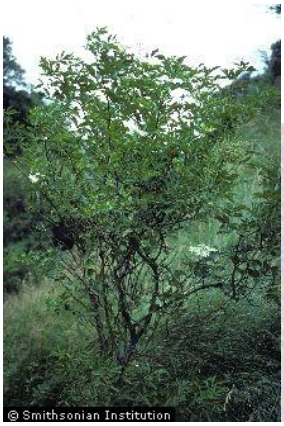
- **Leaves:** Alternate leaves which are 3-5" long and ¼ - $^{2}/_{3}$" wide. The leaf blades are linear-lanceolate in shape with finely serrated edges. Leaves are medium to dark green. http://www.illinoiswildflowers.info/trees/plants/bl_willow.htm
- **Twigs:** Pale brown and smooth. Stems of young shoots are green. http://www.illinoiswildflowers.info/trees/plants/bl_willow.htm
- **Height:** 30-90 feet
- **Fruit:** A capsule which is approximately 3/16" which splits open when mature to release numerous fluffy covered seeds. http://www.illinoiswildflowers.info/trees/plants/bl_willow.htm
- **Flower:** Male and female catkins appear on separate trees. Catkins are ~1 ½" long and appear on the ends of leafy shoots. Many small, yellow-green flowers which do not possess petals. http://www.illinoiswildflowers.info/trees/plants/bl_willow.htm
- **Root system type:** Dense shallow root system.
- **Wetland classification:** Obligate Wetland – Almost always occur in wetlands of the Atlantic and Gulf Coast Plains Region.
- **Growing conditions:** This tree is adapted to grow in soils with ample moisture. Mostly found near rivers, streams, lakes, and swamps. It grows best in areas with an average annual rainfall of 51 inches where 20 inches falls during the growing season. https://plants.usda.gov/java/
- **Wildlife uses:** Black willows flowers are of the first to provide honey bees with pollen and nectar during the spring. In the summer elk and beaver browse on willow leaves and in the winter they browse on willow twigs. Growing along banks the fibrous root systems prevent the soil from being eroded. https://plants.usda.gov/factsheet/pdf/fs_sani.pdf
- **Interesting facts:** The ancient Greeks used a tea made from the bark to treat stiff joints and rheumatic pains. Salicylic acid, the main ingredient in aspirin, was derived from the Black Willow. Salicylic acid derived its name from the Latin word for the tree, Salix. https://plants.usda.gov/factsheet/pdf/fs_sani.pdf

Banker's Willow (*Salix x cotteti*)

- **Leaves:** Alternate, simple leaves. They are entirely oblanceolate and petiolate.
- **Twigs:** Smooth and slender. Young branches are lime green but then change to a darker green
- **Height:** 6-8'
- **Fruit:** This is a sterile hybrid which does not produce any seed.
- **Flower:** Light green cup-shaped flowers. The capsule splits longitudinally.
- **Root system type:** roots form an interlocking network to tie the soil together
- **Wetland classification:** Not classified
- **Growing conditions:** Grows best in moist sites that experience periodic flooding and overflow. It is adaptable to soils of any texture. This cultivar is climatically suited for areas throughout the Appalachian region from New York to Alabama.
- **Wildlife uses:** Good for erosion control along river banks with low to moderate energy flows. The shrubby profile makes it an ideal cover and nesting site for small animals and birds and additionally provides browse for deer, beaver, and rabbits.
- **Interesting facts:** This willow was introduced from the alpine region of West Germany in the mid-1960s. It is a cultivar of the Dwarf Willow

Elderberry (*Sambucus Canadensis*)




- **Leaves:** Compound leaves are set oppositely in pairs in a feather-like arrangement. The leaf surface is bright green. The oval to lance-shaped leaflets are up to 6" long and 2 1/2" wide, with finely serrated margins. They are abruptly narrowed at the tip and lopsidedly narrowed or rounded at the base. Leaflets are usually held on short stalks; the terminal leaflet is on a longer stalk.
- **Twigs:** Stout, silvery- to yellow-gray with obvious, warty lenticels, large white pith; buds are very small, red-brown and pointed, terminal buds are generally lacking.
- **Height:** Generally between 4-12 feet tall.
- **Fruit:** Fruits ripen from late July into September. They are round, slightly bitter, edible purple-black berries with crimson juice. Each is less than 1/4" across, borne in large clusters. Each berry contains 3-5 small seeds. Seed dispersal occurs from July to October, usually through vigorous ingestion by birds and mammals. There are about 230,000 seeds per pound.
- **Flower:** Numerous 1/4" fragrant white flowers, emerge from late June into August. The terminal clusters of flowers, measuring 4"-10" across, are broad, flat or slightly rounded and long-stalked. Flowers usually develop in the second-year on older canes, and are arranged in branched clusters of 5.
- **Root system type:** Dense fibrous root and rhizome.
- **Wetland classification:** Facultative Wetland (FACW). Usually occur in wetlands but occasionally found in non-wetlands.
- **Growing conditions:** American elder occupies well-drained, slightly acid soil bordering streams, and in the adjacent bottomlands, but also grows on gray forest soils and muck. This shrub is widespread and abundant. American elder grows best in full sunlight. Once established, elders soon outdistance herbaceous competition. Thickets of elder are replaced by more shade-tolerant species during the later stages of forest succession, but individual plants and small runners will persist under a forest canopy
- **Wildlife uses:** Structurally complex riparian vegetation communities provide many different habitats and support a diverse array of animal species. Different groups of animals occupy or use the different layers of vegetation. Game birds, squirrels and other rodents, and several kinds of browsers also feed on the fruit or foliage of elderberry. Bears love to eat the elderberry fruits while deer, elk, and moose browse on the stems and foliage. The elderberries are important sources of summer food for many kinds of songbirds.
- **Interesting facts:** Raw Elderberries contain a cyanide-like chemical. This is why the berries must be cooked before eating.

Basswood (*Tilia Americana*)

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

- **Height:** Up to 130 feet tall.
- **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.
- **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.
- **Root system type:** Shallow root systems
- **Wetland classification:** Facultative (FAC). Equally likely to occur in wetlands and non-wetlands.
- **Growing conditions:** Basswood occurs on rich, mesic sites (coves, lower slopes, river bottoms), usually on deep, well-drained soils. It rarely occurs in pure stands but is usually mixed with other forest species. Var. americana is codominant in the sugar maple-basswood cover type and all varieties are a common component of many other rich forests. Basswood occurs up to 1500 meters elevation in the southern Appalachian Mountains. Flowering May-June (-July), usually 1-4 weeks after the leaves appear in mid-May. Seeds are dispersed in October.
- **Wildlife uses:** Basswood is good browse and buds are important for birds and deer in winter. Fruits are eaten by birds and small mammals. The wood decays easily and produces many cavities (especially in trees past 120 years of age), which are used by cavity-nesting animals (wood ducks, pileated woodpeckers, other birds, and small mammals). Basswood is a prolific nectar producer and pollination by honeybees results in a choice grade of honey.
- **Interesting facts:** Native Americans and settlers used the fibrous inner bark ("bast") as a source of fiber for rope, mats, fish nets, and baskets. Basswood is still valued for its soft, light, easily worked wood, especially for turned items and hand carving. It once was the material of choice for prosthetic limbs, but these are now made from synthetics. Other uses have included boxes, toys, woodenware, drawing boards, veneer, venetian blinds, excelsior, and pulp.

Highbush Blueberry *(Vaccinium corymbosum)*

- **Leaves:** Deciduous, alternate, simple, elliptic or ovate, 1 to 3½ inches long and slightly waxy above with pubescence (hairs) at least on the veins beneath
- **Twigs:** Twigs are yellow-green (reddish in winter) and covered with small wart-like dots
- **Height:** 6-12’
- **Fruit:** Berries are 5-12 mm wide, blue to blue-black and many-seeded
- **Flower:** The white or pink-tinged flowers are 6-12mm long and urn-shaped with 5 petals, and occur 8 to 10 per cluster. Flowering occurs February to June, sporadically in the southern portion of its range
- **Root system type:** shallow, generally penetrating no deeper than 10 inches

- **Wetland classification:** Facultative Wetland (FACW); Usually occur in wetlands, but may occur in non-wetlands
- **Growing conditions:** The most common native habitat is in moist or wet peat of moderate to high acidity – in and around marshes, swamps, lakes and flood-prone areas but can also occurs in drier areas such as dunes and barrier beaches, rocky hillsides, oak woods, and pinewoods.
- **Wildlife uses:** Blueberries provide important summer and early fall food for numerous species of game birds, songbirds, and mammals.
- **Interesting facts:** Highbush blueberries are eaten raw, smoke-dried, sun-dried, boiled, and baked in a wide variety of culinary settings. They have one of the highest concentrations of iron of the temperate fruits.

Arrowwood viburnum *(Viburnum dentatum)*

- **Leaves:** Opposite, simple, oval to elliptical, coarsely serrated margins, 1 1/2 to 3 1/2 inches long, shiny dark green above, paler below.
- **Twigs:** Slender, ridged and angled, glabrous or slightly velvety, buds 1/4 inch, green to brown, several scales present.
- **Height:** Up to 10 feet in height.
- **Fruit:** Bluish black, oval drupes, 1/3-inch-long, occurring in clusters, ripening in early fall.
- **Flower:** Small, white in flat topped clusters, 2 to 4 inches across, yellow stamens, appearing in late spring.
- **Root system type:** Somewhat shallow, fibrous.
- **Wetland classification:** Facultative (FAC). Equally likely to occur in wetlands and non-wetlands.
- **Growing conditions:** Southern arrowwood is found natively in open woods and margins, and along streambanks. It prefers loamy, neutral to acid soil with ample moisture, but is adaptable to a range of conditions from dry to fairly wet soil. Plants are salt-tolerant in New England coastal areas. They can grow in generally drier conditions than V. acerifolium. They most commonly occur in partial shade but can be grown in full sun.
- **Wildlife uses:** Attracts Eastern Bluebirds, Norther Flicker, Gray Catbird, and American Robin. Butterflies are attracted to the flower as well.
- **Interesting facts:** The common name refers to the Native American use of the straight young stems as arrow shafts

Nannyberry *(Viburnum lentago)*



- **Leaves:** Leaves are simple, opposite, and ellipse to egg-shaped with finely toothed margins. They are 2-4" long and hairless, or nearly so, on both sides. The ½-1" petiole has a wavy, mostly winged margin. Mature foliage is dark glossy green, becoming deep maroon to red in the fall.
- **Twigs:** Slender, gray-brown; buds are valvate, slender, up to 1/2-inch-long and pinkish brown, flower buds similar but appear swollen.
- **Height:** May reach 36 feet tall.
- **Fruit:** The ½" berry-like fruits (drupes) are blue-black and form hanging clusters from July - September.
- **Flower:** Small, creamy-white, bisexual flowers in flat-topped clusters appear May-June. The ½" berry-like fruits (drupes) are blue-black and form hanging clusters from July - September.
- **Root system type:** Fibrous.
- **Wetland classification:** Facultative (FAC). Equally likely to occur in wetlands and non-wetlands.
- **Growing conditions:** Nannyberry is adaptable to a wide range of sites, but is commonly found natively in moist areas with rich loam to clay-loam soil, such as low woods, swamp borders, or near stream banks. It also occurs on moist, wooded slopes, but tolerates drier sites. Although quite shade-tolerant, it achieves relatively larger size in more open areas.
- **Wildlife uses:** Fruit is eaten by many species of birds and wildlife.
- **Interesting facts:** Nannyberry is also known as "sheepberry" because its fruits smell like wet sheep wool when over ripe.

Blackhaw (*Viburnum prunifolium)*




- **Leaves:** Opposite, simple, elliptical in shape, very finely serrate, 1 to 3 inches long, pinnately veined, with a reddish petiole and often reddish leaf edges; dark green above and paler below
- **Twigs:** Moderately stout and stiff looking, reddish brown, numerous opposite short twigs give an appearance of a fish skeleton; buds are valvate, narrowly ovate, pinkish brown, and leathery looking; flower buds similar but swollen, appearing to have swallowed a BB
- **Height:** 12-15 ft. tall, sometimes growing to 30 ft.
- **Fruit:** Dark blue, elliptical drupes, 1/4-inch-long, often with a whitish bloom, in hanging clusters and ripe in late summer, shriveled raisin-like fruits often persist into winter.
- **Flower:** small, white (buttery looking from a distance), appearing in dense slightly rounded panicles, 2 to 4 inches wide, appearing in mid-spring
- **Root system type:** occasional suckers from the nearby roots at its base
- **Wetland classification:** Facultative Upland (FACU) Usually occur in non-wetlands, but may occur in wetlands
- **Growing conditions:** full sun to full shade, prefers moist, well-drained soils of average fertility in full sun, but is adaptable to poor soils, compacted soils, soils of various pH, permanently moist soils, dry soils, moderate heat, drought, and pollution
- **Wildlife uses:** Berries attract birds and mammals; special value to native bees; refuge especially for birds who like to rest or feed in a protective, densely twiggy canopy
- **Interesting facts:** The common name Blackhaw is thought to be due to its similarity to hawthorns, which are sometimes called red haws, though the two plants are in an entirely different genus and plant family. The berries are edible and often picked and eaten fresh, or used in jams and preserves

American Cranberrybush (*Viburnum trilobum)*

- **Leaves:** Leaves deciduous, opposite, ovate, 5-12 cm long, deeply 3-lobed, coarsely toothed, with 1-6 large glands near the petiole apex, becoming yellow-red or reddish-purple in the fall.
- **Twigs:** Can be smooth or with clear lenticels, the outline of the pith is roughly round with the pith inside the twig being solid, completely filled with spongy tissue; close branching
- **Height:** 6 to 12’
- **Fruit:** Fruit berry-like (a drupe), globose, bright red, 8-10 mm in diameter; stone single, strongly flattened; ripens in Sept/Oct
- **Flower:** Flowers white, in flat-topped clusters 7-10 cm broad, with flowers of two different types, those in the outer ring sterile, showy, with expanded corollas 1-2 cm broad, the inner flowers much smaller, fertile, with yellow anthers
- **Root system type:** Shallow, fibrous, spreading

- **Wetland classification:** Facultative Wetland (FACW); Usually occur in wetlands, but may occur in non-wetlands
- **Growing conditions:** It is found growing in well-drained, imperfectly drained, and poorly drained, but not droughty soils. Soil pH is not critical, but for best results soil should be reasonably fertile.
- **Wildlife uses:** American cranberrybush is a good wildlife food and cover plant for small mammals and birds. Twigs are eaten by deer, moose and beaver. Fruits are a staple winter food for ruffed grouse and are eaten sparingly by pheasants and at least five species of songbirds.
- **Interesting facts:** The bark of highbush cranberry yields a powerful antispasmodic (whence the origin of one its American common names, crampbark). The water-soluble preparation (containing a bitter compound called viburnine) has been used for relief of menstrual and stomach cramps and asthma. The antispasmodic properties apparently were discovered independently by European, Native American, and Asian peoples. The action of this agent from highbush cranberry closely resembles that of black haw (Viburnum prunifolium).