

American Beech

Fagus grandifolia

Identification Features:

- DECIDUOUS.
- ALTERNATE branching pattern.
- Leaves: SIMPLE; ELLIPTICAL or OVATE in shape; tapered tip; sharply TOOTHED margins; 3"-4" long; light green and glossy above and yellow-green below; golden bronze Autumn color.
- Flowers: female flowers are in small terminal spikes; male flowers are in clusters that dangle; yellow-green in color and not showy; bloom in early Spring.
- Fruits: known as beechnuts; prickly BUR containing triangular brown and shiny nuts; ½"-1" long; ripen in Autumn.
- Bark: smooth and light gray.
- Medium size tree reaching 60 feet tall. Grows in a ROUND or OVAL shape.



LEAVES

Habitat:

- NATIVE to Pennsylvania.
- Moist soils.



FLOWERS

Wildlife Value:

- Beechnuts are an important food for wildlife including bears, squirrels, turkeys, and grouse.
- Important tree for cavity-nesting birds.



BEECHNUTS

Human Value:

- Excellent shade tree.
- Wood is hard, strong, and tough, but will rot when exposed to weather and soil.
- Wood is used for flooring, tools, containers, and fuel.
- Native Americans used the tree for medicine and food.



BARK



Black Locust

Robinia pseudoacacia

LEAF



Identification Features:

- DECIDUOUS.
- ALTERNATE branching pattern.
- Leaves: PINNATELY COMPOUND; up to 1' long; made up of 7-19 OVAL shaped leaflets; leaflets have SMOOTH margins; bluish-green in color; very little color change in autumn.
- Flowers: white and very fragrant; grow in drooping clusters; up to 8" long; bloom in Spring.
- Fruits: thin, flat pods containing 4-8 seeds; pod splits in half when ripe; 4" long; ripen in Autumn.
- Bark: light gray with deep furrows.
- Spines grow on twigs in pairs. They are sharp!
- Medium-sized tree that grows up to 50 feet tall. Grows in an OVAL shape.

Habitat:

- NATIVE to Pennsylvania.
- Woods, fields, stream banks.



Spines



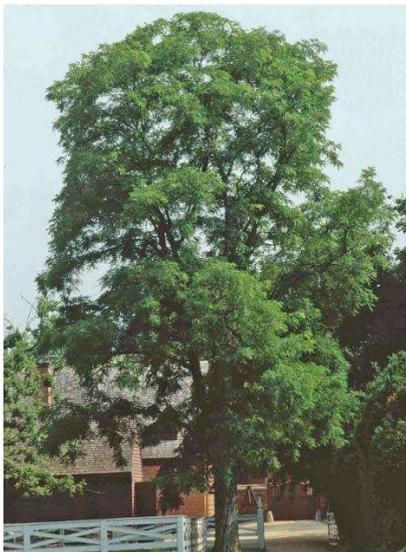
FLOWERS

Wildlife Value:

- Seeds are eaten by squirrels, Northern bobwhite, mourning doves, wild turkey, white-tailed deer, and Eastern cottontails.
- Flowers are pollinated by bees and hummingbirds.
- Flower nectar is made into honey by honeybees.
- Tree used by woodpeckers to make cavities for nesting.



SEED PODS



Human Value:

- Wood doesn't rot quickly in the ground, so it is commonly used for fence posts, poles, paper, boxes, stakes, firewood, and railroad ties.
- Seeds are poisonous to humans.
- Planted to reduce soil erosion.
- Planted near honeybee hives because the flowers produce a large supply of nectar that bees can make into honey.

Box Elder

Acer negundo

Identification Features:

- DECIDUOUS.
- OPPOSITE branching pattern.
- Leaves: PINNATELY COMPOUND; 6"-8" long; made up of 3-5 OVAL shaped leaflets; leaflets have irregular TOOTHED margins; very little color change in autumn.
- Flowers: drooping; reddish- green in color; bloom in Spring.
- Fruits: SAMARAS in drooping clusters; samaras are horseshoe shaped with wings parallel or in-curved; 1½"-2" long; ripen in Autumn.
- Medium size tree reaching up to 70 feet tall. Grows in a ROUND or IRREGULAR shape.
- A species of maple trees.



LEAF

Habitat:

- NATIVE to Pennsylvania.
- Low, moist areas, and stream banks.



FLOWERS

Wildlife Value:

- Birds and squirrels eat the seeds.
- White-tailed deer eat stems in Autumn.
- Leaves are eaten by caterpillars and many other insects.



SAMARAS



Human Value:

- Planted in disturbed areas to prevent erosion.
- Wood is used for inexpensive furniture, construction lumber, and boxes.
- Native Americans made syrup from box elder sap, but it is not as sweet as sugar maple syrup.

Chestnut Oak

Quercus montana

Identification Features:

- DECIDUOUS.
- ALTERNATE branching pattern.
- Leaves: SIMPLE; OVATE or ELLIPTICAL in shape; course, rounded TOOTHED margin: dark green, smooth above and paler beneath; 5"-9" long; red to orange to yellow-brown Autumn color.
- Flowers: female flowers are reddish and appear as single spikes; male flowers are yellow CATKINS that dangle from the branch; 2"-3" long; bloom in Spring.
- Fruits: ACORNS; 1"-1½" long; dark-brown and shiny; acorn cup is thin, hairy inside and covers ⅓ - ½ of the nut; acorns are sweet; ripen in Autumn.
- Bark: thick, deeply ridged and furrowed; ridges are distinctly V-shaped.
- Medium size tree reaching over 70 feet tall. Grows in a ROUND shape.



LEAF

Habitat:

- NATIVE to Pennsylvania.
- Dry slopes and ridgetops.



CATKINS



ACORNS

Wildlife Value:

- Acorns are eaten by squirrels, white-tailed deer, black bear, turkey, and many other animals.
- White-tailed deer browse young sprouts.
- Small birds and mammals nest in chestnut oak trees.

Human Value:

- Wood is heavy and strong and used for furniture, flooring and railroad ties.



BARK



Eastern Hemlock

Tsuga canadensis

LEAVES

Identification Features:

- EVERGREEN.
- Leaves: flattened NEEDLES attached singly to branches; ½" long; needles have 2 white lines on the underside.
- Fruits: egg-shaped CONES; ¾" long; 2 small-winged seeds are found under each cone scale.
- Large, long-lived tree, reaching heights of 70 feet tall. Some old-growth forests have hemlocks that are up to 400 years old! Grows in a PYRAMIDAL shape.



Habitat:

- NATIVE to Pennsylvania.
- Cool, moist forests.
- State tree of Pennsylvania.

CONES

Wildlife Value:

- Ruffed grouse, wild turkey, and songbirds eat the seeds.
- Many birds find shelter on the branches.
- Provides an excellent cover for white-tailed deer.
- The deep shade that Hemlock trees provide helps keep forest streams cool.

Human Value:

- Used in landscaping. It can be shaped into rectangular hedges.
- Tannic acid harvested from tree bark is used for tanning leather.
- Wood used in construction.
- Native Americans used Hemlock wood as an ingredient in bread and soups. Tea was made from leaves which have high vitamin C content.



Eastern White Pine

Pinus strobes

Identification Features:

- EVERGREEN.
- Leaves: NEEDLES in clusters of 5. Each needle is 2½" - 5" long; bluish green in color; needles are 3-sided.
- Fruits: CONES; 5"-8" long; cones do not have prickles but are resinous (sticky); each cone scale holds 2 winged seeds.
- Large tree reaching 50-90 feet high. Grows in a PYRAMIDAL shape.



Habitat:

- NATIVE to Pennsylvania.
- Forests.
- Parks and Neighborhoods.



LEAVES

Wildlife Value:

- Seeds and needles are eaten by birds, black bears, squirrels, chipmunks, and mice.
- Beavers and porcupines eat the inner bark.
- White-tailed deer eat the young twigs.
- Needles are food for caterpillars.
- Provides a great nesting site for birds. Bald eagles build nests in living trees, usually at a main branch located below the crown top.

NEEDLE CLUSTER



Human Value:

- Wood is valuable and used for furniture, cabinets, house construction, and woodworking.
- Planted as Christmas trees.
- Historically used for ship masts.



CONES

Red Maple

Acer rubrum

LEAF



Identification Features:

- DECIDUOUS.
- OPPOSITE branching pattern.
- Leaves: SIMPLE; ROUND shape; 3-5 shallow LOBES; coarsely TOOTHED; 2"-6" long; bright red or orange Autumn color.
- Flowers: small; reddish-orange; droop in clusters; bloom in late Winter – early Spring.
- Fruits: SAMARAS; horseshoe shaped; wings spread at a narrow angle; red to brown in color; 1" long; ripen in Spring.
- Bark: thin, smooth, and light gray when young; older bark may be dark gray and rough with irregular peeling flakes.
- Medium tree reaching 60 feet tall. Grows in an OVAL or ROUND shape.

FLOWERS



Habitat:

- NATIVE to Pennsylvania.
- Forests, stream banks, fields, understory.

Wildlife Value:

- Young trees are a favorite food of white-tailed deer.
- Samaras are eaten by squirrels and birds.
- Many species of butterflies and bees drink nectar from flowers.
- Leaf hoppers, scale insects, and beetles eat the plant juices and wood.
- Woodpeckers, screech owls, wood ducks, rat snakes, and other animals may nest in holes in trunks.



SAMARAS



Human Value:

- Used to make paper, furniture, cabinets, plywood, floors and railroad ties.
- Can be tapped for sap and made into maple syrup.

Slippery Elm

Ulmus rubra

Identification Features:

- DECIDUOUS.
- ALTERNATE branching pattern.
- Leaves: SIMPLE; ELLIPTICAL or OVATE in shape; DOUBLE SERRATE margin; UNEVEN leaf base; sand-papery rough on both sides; 5"-7" long; yellow Autumn color.
- Flowers: greenish-red; arranged in dense clusters; ¼" long; bloom in early Spring.
- Fruits: rounded SAMARAS; samaras contain a single flattened seed surrounded by an oval, thin papery wing. ¼"- ¾" long; ripen in Spring.
- Bark: inner bark is sticky and fragrant.
- Medium size tree reaching 60 feet tall. Grows in a VASE shape.



LEAVES

Habitat:

- NATIVE to Pennsylvania.
- Moist soils near streams.



FLOWERS

Wildlife Value:

- Birds, such as the red-shouldered hawk often nest in the thick foliage.
- Seeds and buds are food for songbirds, gamebirds, gray squirrels, opossums, and Eastern cottontails.
- White-tailed deer and Eastern cottontails browse on the twigs.
- The sap is consumed by the yellow-bellied sapsucker.
- Wood is a food source for beavers.



SAMARAS

Human Value:

- The slick and sticky inner bark was chewed by Native Americans and early pioneers to quench thirst when water was not available.
- Native Americans also used the inner bark to make ropes.
- Native Americans used slippery elm to treat a variety of ailments including sore throats, sore eyes and body sores.
- Today slippery elm is used as a laxative and used to relieve sore throats.
- Wood is used for making furniture, paneling and containers.

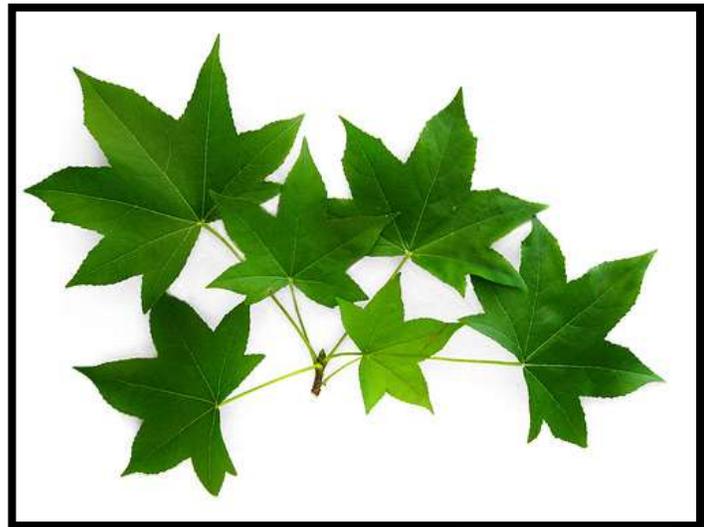


Sweetgum

Liquidambar styraciflua

Identification Features:

- DECIDUOUS.
- ALTERNATE branching pattern.
- Leaves: SIMPLE; 5-7 finely TOOTHED LOBES; STAR shaped; 4"-7½" long; have a pleasant smell when crushed; turn shades of yellow-orange-red-purple in Autumn.
- Flowers: tiny, green, and have no true petals; bloom in spring.
- Fruits: woody, brown, spiny "gum balls" that contain tiny brown winged seeds; 1½" in diameter; ripen in Autumn.
- A medium sized tree that can grow up to 70 feet tall. Grows in a PYRAMIDAL shape.



LEAVES

Habitat:

- NATIVE to Pennsylvania.
- Wet woods, swamps, stream banks, and old fields. Prefers sunny areas.
- Community parks and neighborhoods.

Wildlife Value:

- Seeds are eaten by finches, ducks, quails, chickadees, sparrows, wrens, squirrels, and chipmunks.
- Beavers use the wood for making dams.
- Young trees may get eaten by white-tailed deer, Eastern cottontails, mice, or beavers.

- Provides shelter for many birds and mammals.

Human Value:

- Wood is used for lumber, railroad ties, pulpwood for paper, and furniture.
- Sap is used as an ingredient in medicine and perfume.
- Native Americans and early pioneers made chewing gum from the sap, tea from the seeds and bark, and used the roots for many medicines.
- Popular shade tree.

FLOWERS



FRUIT



Tree of Heaven

Ailanthus altissima

Identification Features:

- DECIDUOUS.
- ALTERNATE branching pattern.
- Leaves: PINNATELY COMPOUND; ELLIPTICAL shaped leaflets; 11-41 leaflets; lower leaflets often TOOTHED at the base; 1½' -3' long.
- Flowers: small; yellow-green in color; in clusters that appear near the tips of branches; bloom in Spring.
- Fruits: SAMARAS; 1½" long; flat and twisted with a flattened seed in the center; tan to pink in color; occur in large clusters; ripen in Summer.
- Leaves and twigs have a rank odor when broken.
- Tree reaches heights up to 90 feet tall. Grows in an IRREGULAR shape.



LEAF

Habitat:

- INTRODUCED & INVASIVE to Pennsylvania.
- Disturbed woods, roadsides, vacant lots and railroad banks.



LEAFLETS

Where did it come from?

Tree of heaven is an introduced species that is native to central China. It was introduced to the U.S. in 1784 by a Philadelphia, PA gardener. By 1840 it was commonly available from nurseries. Since its introduction, tree of heaven has sprouted up just about anywhere including alleys, sidewalks, parking lots, streets as well as in fields, roadsides, fencerows, woodland edges and forest openings.



FLOWERS



SAMARAS

How does it spread?

Tree of heaven spreads by seeds and suckering. Suckering occurs when cut stumps and root fragments re-sprout. A single tree can produce up to 325,000 seeds per year. The seeds are very light in weight and can easily be transported by wind. Wind can blow samaras onto clothing, gear or cars of a hiker or biker. If the person is not careful to clean off these items, the seeds can easily "hitchhike" their way to new locations. Once established, it grows rapidly and forms dense stands that displace native plants. Tree of heaven also produces chemicals that kill or prevent other plants from growing near it.

How can it be controlled?

Seedlings can be pulled or dug up. Care must be taken to remove the entire plant including all roots and fragments to prevent re-sprouting. Several herbicides have also proven to be effective in controlling tree of heaven. Targeting the removal of large female trees is the best way to control the spread. Female trees are responsible for seed production. Before any control measures are used, it is important to correctly identify the plant because some native species are often confused with tree of heaven.

Native alternatives:

- Box elder
- Smooth sumac
- Staghorn sumac
- Black walnut
- White ash
- Tulip tree

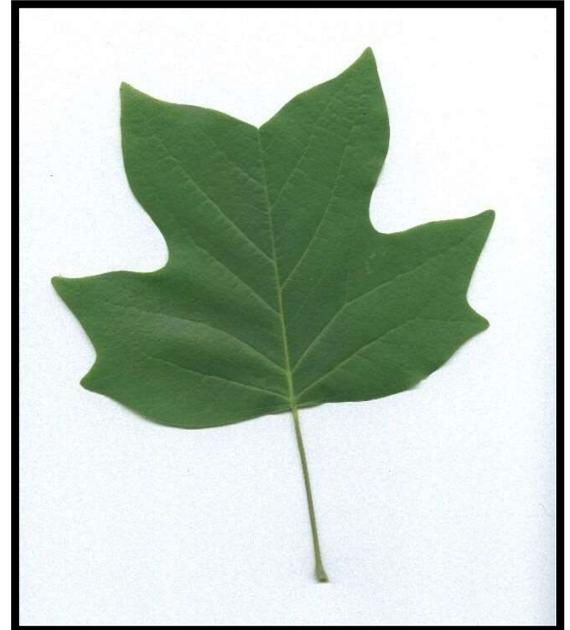


Tulip Tree

Liriodendron tulipifera

Identification Features:

- DECIDUOUS.
- ALTERNATE branching pattern.
- Leaves: SIMPLE; 4 LOBED; leaf shape resembles a cat's face; 4"-6" in diameter; yellow Autumn color.
- Flowers: tulip-shaped; grow high in the trees; 1½"-2" in diameter; greenish-yellow petals with orange bases; bloom in Spring.
- Fruits: cone-like; 2½"- 3" long; made up of winged seeds called SAMARAS; cones held upright in the tree; green at first turning light brown; ripen in Autumn.
- One of the tallest trees in eastern forests reaching up to 100 feet tall. Grows in an OVAL shape.



LEAF

FLOWER



Habitat:

- NATIVE to Pennsylvania.
- Sunny forest spots near streams.

Wildlife Value:

- Seeds are eaten by songbirds, game birds, rabbits, squirrels, and mice.
- White-tailed deer eat young twigs.
- Leaves are food for the Eastern tiger swallowtail butterfly caterpillar and some of our giant moths including the tulip-tree moth and promethea Moth.
- Flowers provide nectar for ruby-throated hummingbirds.



FRUIT

Human Value:

- Planted on streets and yards for shade and appearance.
- Planted for reforestation of damaged sites because it grows quickly.
- Wood is used to make pulpwood for paper.
- A valuable hardwood. It is used for furniture, general construction, plywood, and boxes.
- Native Americans used tulip tree wood to make dugout canoes.



White Ash

Fraxinus Americana

LEAF



Identification Features:

- DECIDUOUS
- OPPOSITE branching pattern.
- Leaves: PINNATELY COMPOUND; 8"-15" long; 5-9 ELLIPTICAL to LANCE shaped leaflets; Autumn colors range from yellow to deep purple and maroon.
- Flowers: small; green; grow in clusters; bloom in Spring.
- Fruits: SAMARAS; 1"-2" long; resemble canoe paddles; ripen in late Summer.
- A large tree that can reach 80 feet tall. Grows in an OVAL or PYRAMIDAL shape.

Habitat:

- NATIVE to Pennsylvania.
- Forests, school campuses, lawns, and parks.

FLOWERS



Wildlife Value:

- White-tailed deer, beaver, porcupine, and rabbits eat the bark and twigs of young trees.
- Samaras are eaten by wood ducks, bobwhite quail, turkey, grouse, squirrels, mice, and many other animals.
- Cavity nesting animals often find good nesting sites in white ash trees.



Clusters of SAMARAS



Human Value:

- Gets its name from its white colored wood, which is strong, heavy, and shock resistant.
- Native Americans used the wood for tools and it is still used today for tool handles.
- Used for baseball bats, furniture, doors, railroad ties, canoe paddles, snowshoes, boats, and more!
- Used as a shade tree in public places.
- Used to reforest disturbed areas.
- Native Americans had many medicinal uses for white ash including to stop itching from mosquito bites.



Single SAMARA