

Tree Species	Mature Height	Mature Spread	Hardiness Zones	Growth Rate	Fall Color	Flower Bloom Time
American Basswood /Linden	60 – 80'	20 – 40'	3 – 8	Medium	Pale Yellow	June
American Beech	50 – 70'	40 – 60'	4 – 9	Slow to Medium	Yellow, Bronze	April – Early May
Black Gum	30 – 50'	20 – 30'	4 – 9	Slow to Medium	Yellow, orange, scarlet, purple green	May
Eastern Hemlock	40 – 70'	25 – 35'	3 – 7	Medium	Yellow, orange, scarlet, purple green	
Grey Birch	20 – 30'	10 – 20'	3 – 6	Medium to Fast	Yellow	April – May
Northern Red Oak	60 – 75'	40 – 50'	3 – 8	Fast	Red, Scarlet	April – May
Shagbark Hickory	60 – 80'	40 – 50'	4 – 8		Yellow, Bronze	April – May
Sugar Maple	60 – 75'	40 – 50'	4 – 8	Slow to Medium	Yellow, Orange, Red	April – May
White Ash	50 – 80'	40 – 60'	4 – 9	Medium	Yellow or Purple	April – Early May
White Pine	50 – 80'	20 – 40'	3 – 7	Fast	Green	

Information from: Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses; By Michael A. Dirr



Mature white pine in an urban setting that has lost its lower branches



White pine bark on large tree, dark brown with rectangular fissures



Eastern White Pine

Pinus strobus

A great screen for wind or sun or as an ornamental tree, this dark green tree can be identified by its soft, loose texture, plated branching, pyramidal crown, and 3"-5" long needles that are in clusters of five. The cone is 5"-10" long and are typically sticky with resin. White pine is an early succession tree because its seedlings need lots of sun to survive. White pine will not live as long in hardwood forests as it gets shaded out by maple and beech trees. The as the tree matures white pine will lose its lower branches to snow or lack of sunlight leaving a tall straight trunk exposed.

Cultural and Historical

Almost all of New York State outside the Adirondacks was covered in White pine forests before European settlers colonized the area. White pine is a highly favorable lumber tree and therefore a huge lumber market evolved as soon as Europeans discovered it. The wood is relatively strong for its light weight and had a huge importance in building American cities, build homes, railroads, furniture and ship masts and is still important for framing homes, telephone posts, and furniture today.

Ecological Value

Eastern white pine provides shelter for rabbits, ruffed grouse, deer, squirrels, and doves. Many small mammals and species of songbirds eat the seeds, white pine contribute to songbird diversity of hardwood forests.

Sketch: This healthy white pine is in full sun in Oakwood Cemetery near the sidewalk along Comstock. It is beginning to lose its lower branches and take the on the form of the a mature white pine.



Eastern Hemlock growing under the shade of maple and beech trees



Eastern Hemlock cone and needles have a dainty, airy texture

Eastern Hemlock

Tsuga canadensis

A great ornamental tree for moist, shady sites, this dark green evergreen can be identified by its fine, loose texture and conical form. The needles are $\frac{1}{4}$ " - $\frac{3}{4}$ " long, dark green on top and have 2 silvery lines on the underside. The cones are $\frac{1}{2}$ " to $\frac{3}{4}$ " with thin scales. The branches droop down and turn up at the tips giving it a graceful character. This tree can be pruned into a dense hedge. It grows naturally in northeastern forests as a climax species and is one of the few trees tolerant to dense shade.

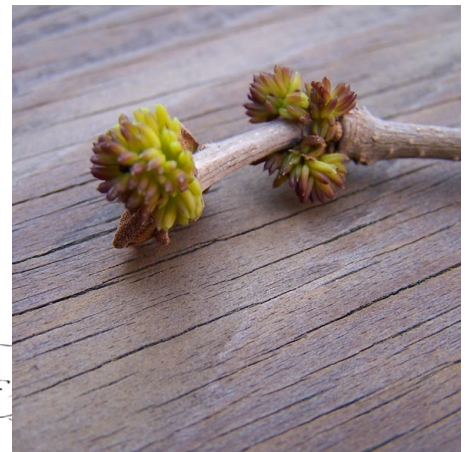
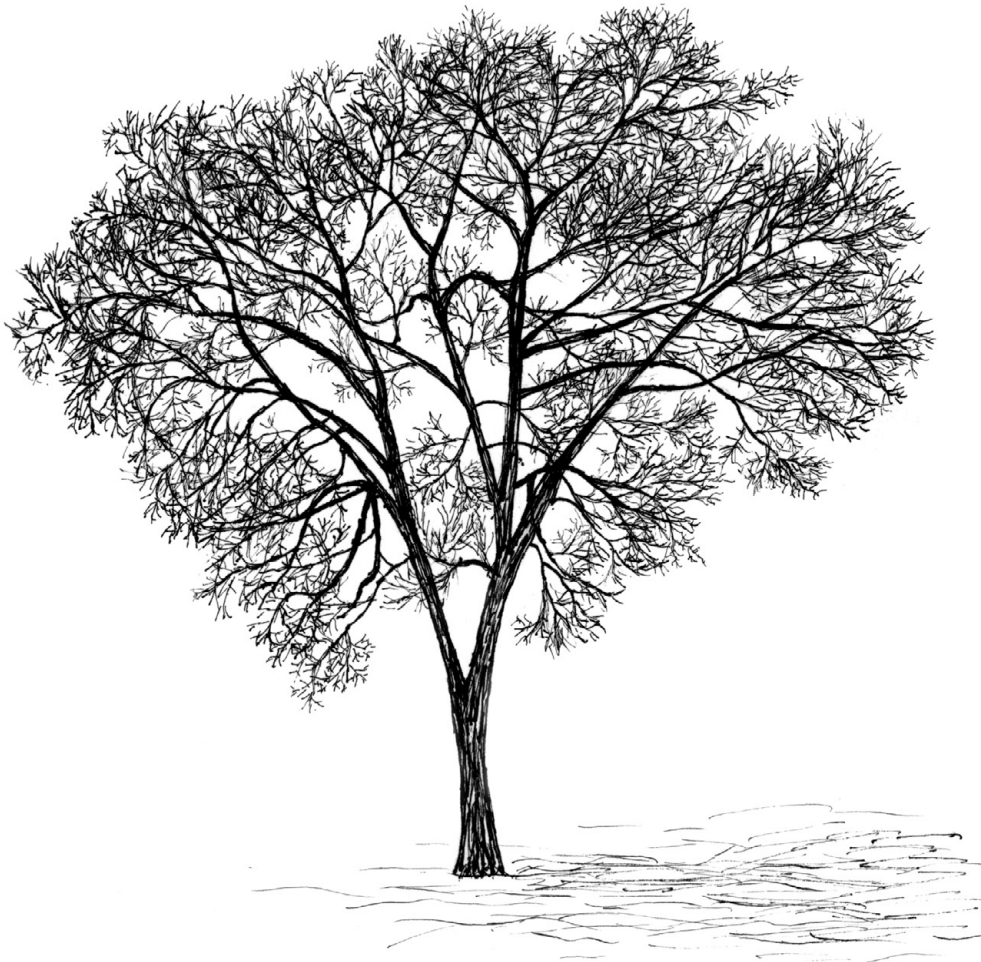
Cultural and Historical

The Eastern hemlock contains more tannin in its bark than other northeast trees and was the center of a huge industry in the northeast. Early on most of the wood was wasted as it was seen as poor quality compared to white pine. As white pine numbers dwindled, hemlock entered the lumber industry. Early settlers wrote about the dark blue green color of the Catskill Mountains but that dark blue green changed to the lighter greens of maple, birches, and pines after the removal of almost all of the hemlock trees. Today there is better forest management and the hemlocks are reclaiming their place as the climax species of the northeastern forest.

Ecological Value

The dense shade and cover of Eastern Hemlock provides shelter for deer, rabbits, and other small mammals and the seeds can be eaten by songbirds and mice.

Sketch: The loose character, conical form, and drooping branches of a tree in Oakwood Cemetery. The tree was much more dense than it was drawn because it was in full sun and surrounded by grass.



Male ash flower in late April, male and female flowers are on separate trees

White Ash

Fraxinus americana

White ash is a beautiful shade tree that prefers rich, moist, well drained soil. The bark is gray brown and furrowed bark with flat topped ridges that create a criss cross pattern. White ash leaves are pinnately compound, 8"-10" with 5 to 11 randomly serrated oblong ovoid leaflets that turn yellow or purple in the fall. The seeds are in winged samara that are 1"-2" long and the shape of canoe paddle blades. White ash are found growing scattered among beech, birch, sugar maple, basswood, white pine, eastern hemlock, red and white oak, and black cherry. It will not grow on dry ridges or in swamps. White ash are very similar to green ash which has narrower leaflets and D-shaped rather than the C-shaped bud scars of white ash. Green ash tends to grow in wetter sites and is usually chosen over white ash for use on streets and urban areas due to its tolerance and root structure.

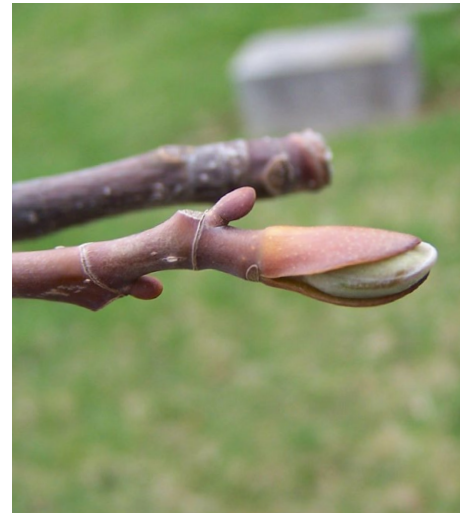
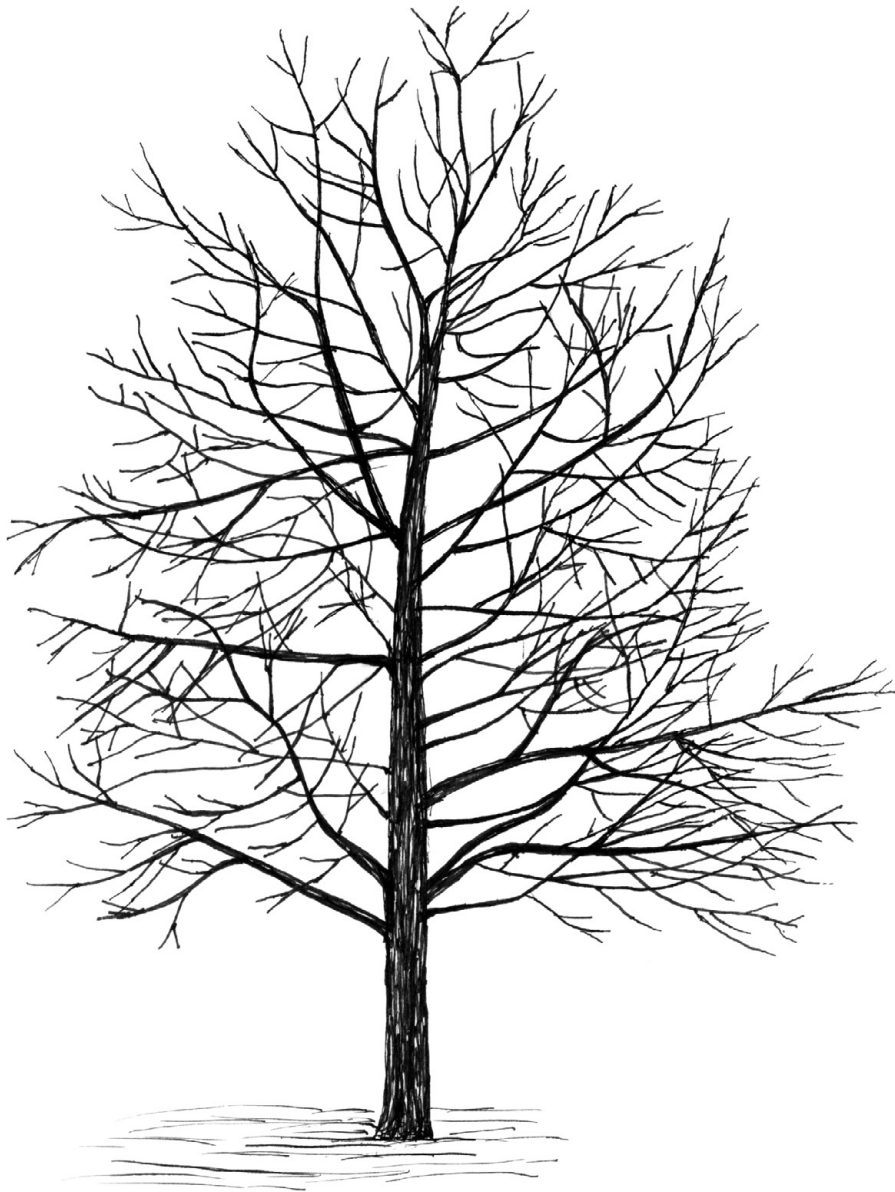
Cultural and Historical

White ash are know as the primary wood for baseball bats and is also used for the floors of bowling lanes, shovel handles, oars, and furniture. Some believe that white ash is offensive to rattle snakes and hunters would sometimes stuff their shoes with white ash leaves to prevent rattle snake bites.

Ecological Value

White ash seeds can be eaten by quail, songbirds, and sometimes rodents. White ash is also a pioneer species that can be found in abandon pastures and fields but it grows tallest in the forest where other trees protect it.

Sketch: An ash tree in full sun surrounded by grass in front of Shaw hall, corner of Comstock and Euclid. Likely a green ash since they are more often planted as street trees.



The bud of an American Basswood just starting to grow into leaves, late April

American Basswood

Tilia americana

The American basswood, also known as American linden, are beautiful shade trees with cylindrical form and a rounded top. The leaves are 4"- 6", dark green, alternate, ovoid or heart shaped with an uneven base, coarse teeth, and pointy tip. From June to July, basswood have small white to yellow flowers found in bunches drooping from leaf-like bracts where pea sized fruit develop around September and may remain until spring. In nature these trees typically have basal sprouts and the tree is found dispersed throughout a forest rather than in concentrated stands. The large lateral root structure of basswood makes it a poor street tree but better suited for parks and larger areas.

Cultural and Historical

The fibrous inner bark of basswood were used by Europeans and Native Americans to make rope, mats, and shoes. The wood is light and pliable and basswood flowers provide nectar that is still valued for producing great tasting honey.

Ecological Value

The fruit is fair food for quail and rodents and the root sprouts may be browsed by deer and rabbits. It is a significant provider of pollen and nectar for honey bees and other insects.

Sketch: This tree is on the north side of Marshall hall on ESF campus, it is in open canopy surrounded by lawn and receives the late afternoon sun. In the forest setting the tree canopy would be much higher.



New leaves on American Beech in early May at Clarke's Reservation



The bud of an American Beech, late April

American Beech

Fagus grandifolia

American beech is widely spread throughout the forests of New York State and is known for its smooth gray bark and broad spreading form with a rounded crown that is usually seen on trees growing in parks and open areas. In the forest they are straighter with narrower form. The leaves of beech are lighter green, opposite, simple, oblong oval in shape with coarse teeth. In the forest in New York, Beech is usually found with sugar maple, yellow birch, and red spruce at higher elevations. It can be seen throughout the woods at Clarke's reservation near sugar maple, yellow birch, hickories, hop hornbeam, white pine, oak, basswood and hemlock. Beech nuts usually ripen between September and November and are triangular in shape enclosed in groups of 2 or 3 within a bur cover that opens up with heavy frost. Beech leaves turn yellow in the fall and beech saplings can usually be identified lining the forest under story holding onto their crinkled brown leaves throughout the winter.

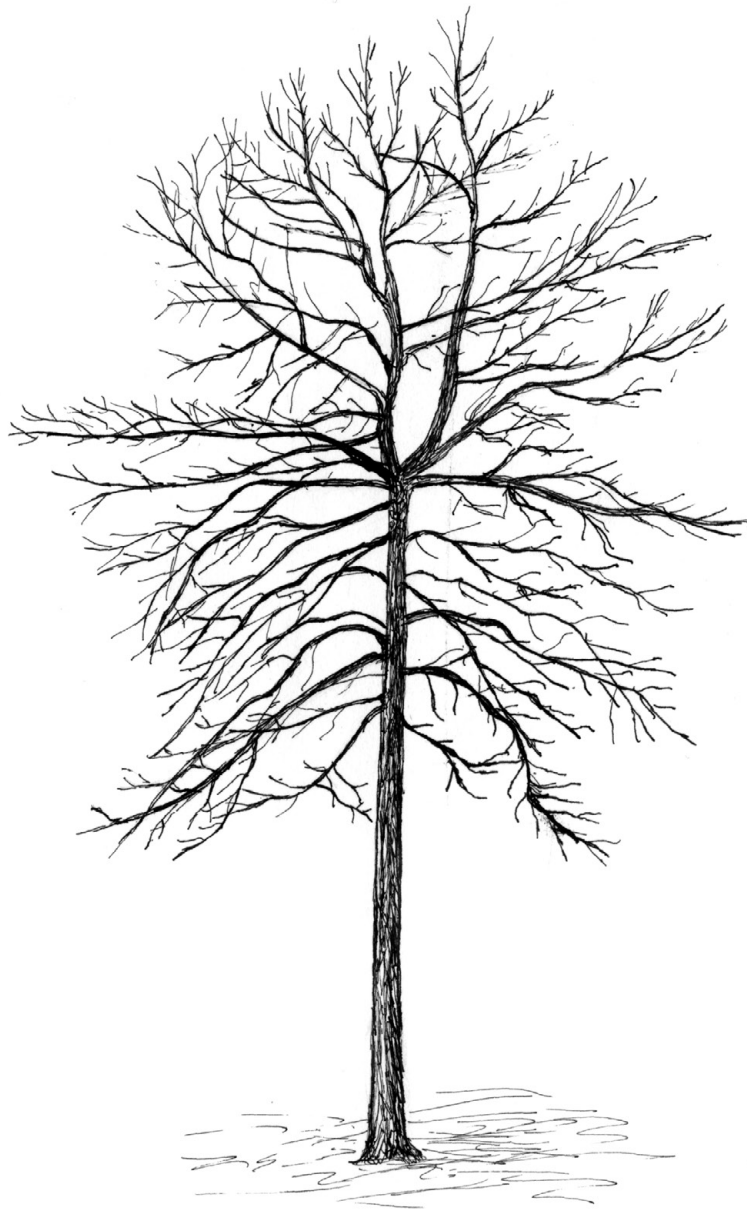
Cultural and Historical

The smooth bark of American beech is irresistible for carving names and initials. Beech wood is heavy and strong and pale in color used for flooring and furniture but does not have as high a value as other hardwoods. Beech nut may can be eaten by humans and were also pressed for oil to be used for cooking and in lamps.

Ecological Value

Beech nuts are eaten by many species of birds, wild turkeys, foxes, squirrels, bears, and deer.

Sketch: This beech tree was found in the an open grassy meridian on Walnut Ave with other trees within 40 to 60 feet. The branches have been trimmed up and it is partially shades so it does not have its characteristic spreading form but still has a rounded crown.



Young black gum tree on ESF Campus

Black Gum

Nyssa sylvatica

Black Gum is medium to large tree with simply, alternate, oval, thick, shiny, dark green leaves. It has dense foliage and its lower branches droop downwards. Black gum is used in the landscape for its fall color and wild-life value as well as its tolerance to wet and dry soil. In the fall its leaf color ranges from scarlet, red, purple, orange, or yellow. Small greenish white flowers are produced in spring when the leaves unfold. The blue/ black fruit that emerges in September is bitter and fleshy with ovoid shape of $\frac{1}{3}$ "- $\frac{1}{2}$ " in groups of 2-3.

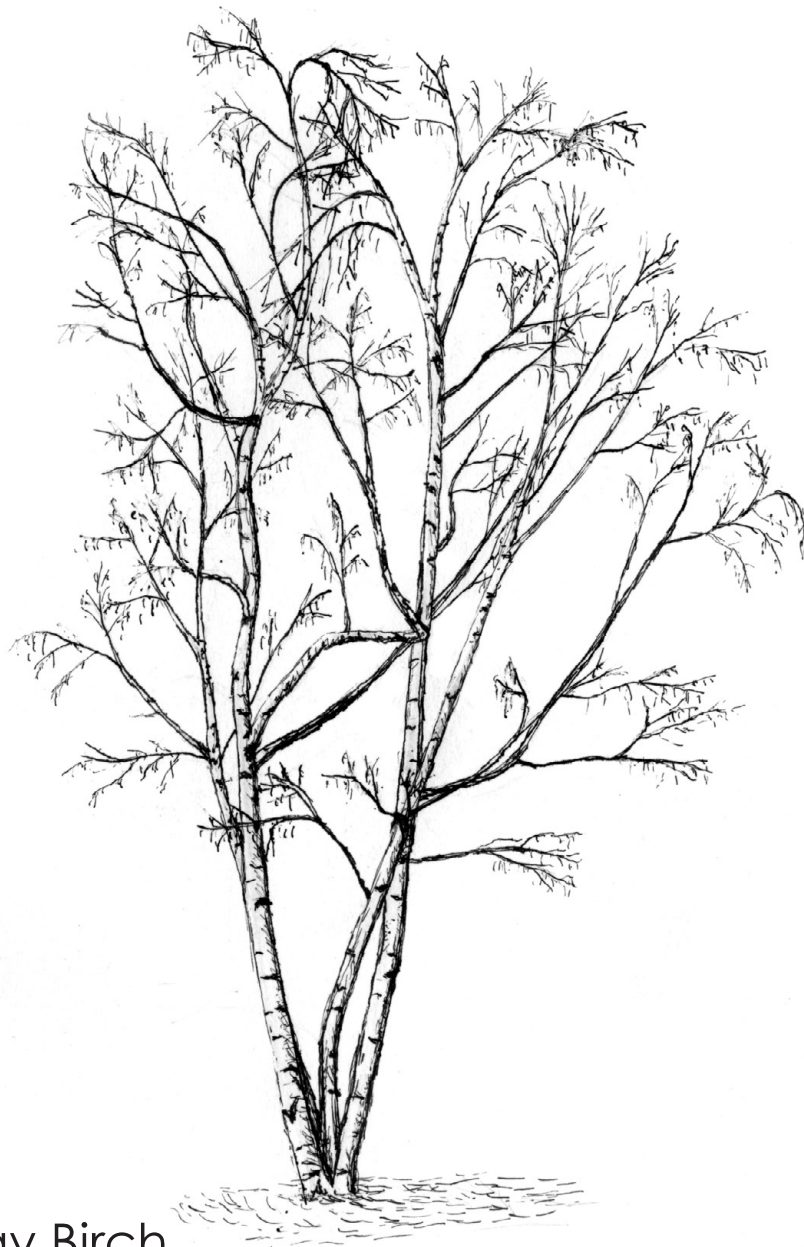
Cultural and Historical

Timber is not as valuable as larger hardwood trees but is light and used for railroad cross ties and pallets. The tree is not a dominant species of any forest type and is found dispersed with other species in over 35 forest types. The honey produced from these trees is valued by honey producers for its light and mild flavor.

Ecological Value

The fruit is eaten by songbirds, grouse, turkeys, mice, raccoons, and deer. Its flowers are excellent for honey bees and other pollinator insects.

Black gum is important in reestablishing areas where forest fires or other disturbances have occurred and used for re-naturalizing abandon or erosion prone areas.



Gray Birch

Betula populifolia

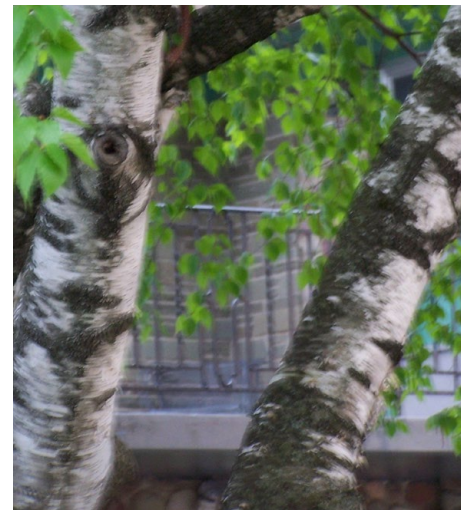
Gray birch is the smallest of the native birch trees at 30 feet. The tree is typically multi-stemmed, with conical or a narrow pyramidal form. The most recognizable features are its chalky white bark that does not peel but has black 'mustaches' (chevrons) and simple, alternate, serrated, triangular leaves. It looks similar to paper birch but paper birch bark will ex-foliate and tends to become a creamy tan color while the leaves are more oval shaped. Also the catkins of gray birch hang singly while those of paper birch are typically in groups of 2 or 3. This species is a nice ornamental tree and accent in the landscape, especially when paired with evergreens such as white pine.

Cultural and Historical

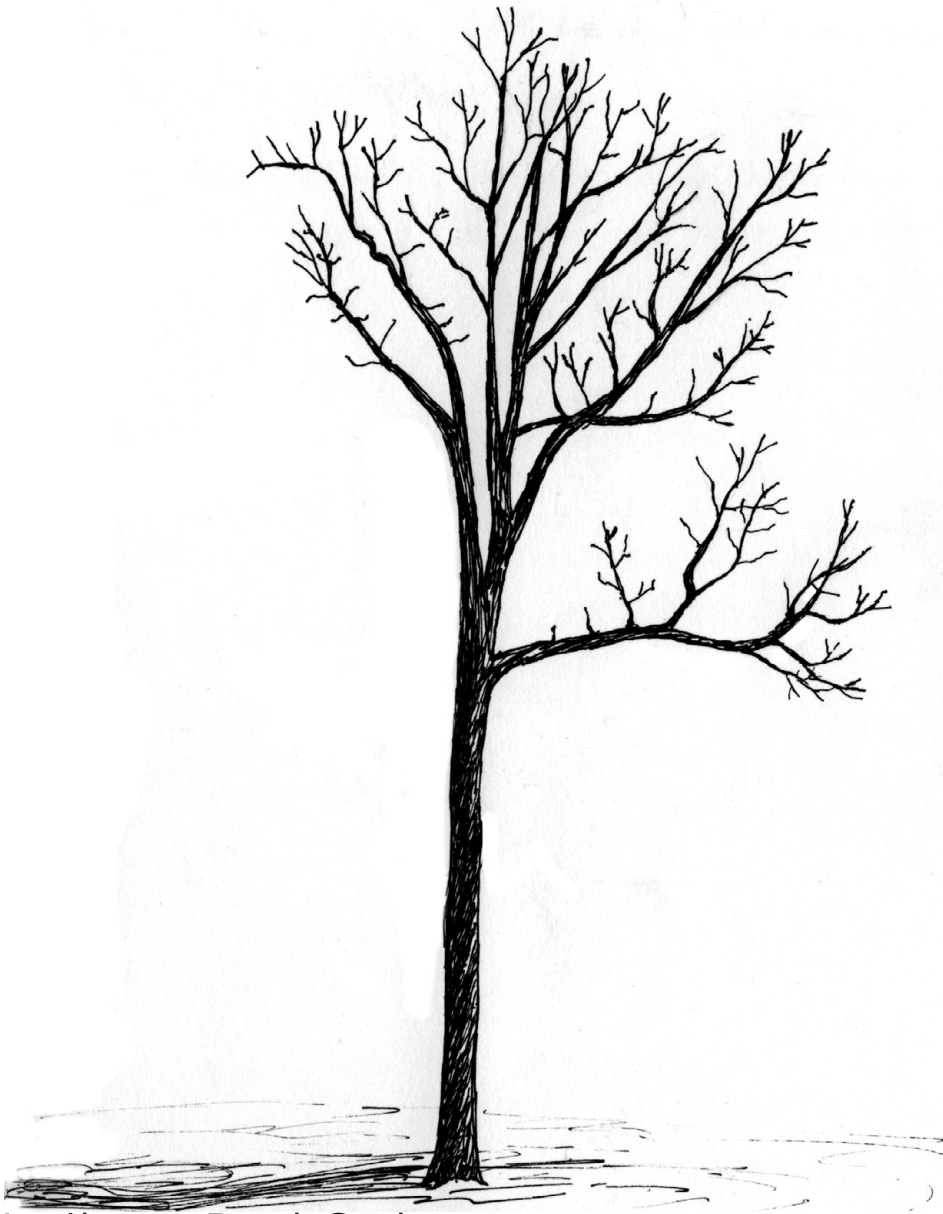
Gray birch wood is not as strong as that of paper birch and is therefore used more for fuel or to make spools or barrels hoops.

Ecological Value

The fruit can be eaten by grouse and songbirds and The branches may be browsed by deer. Grey birch is a pioneer species that is important to the first stage of ecological succession and reclamation of land.



The bark of gray birch with many dark markings and chevrons



Northern Red Oak

Quercus rubra

Red oak leaves are shiny dark green, 5"-9" and have pointed tips and V-shaped lobes. The species have a beautiful red to scarlet fall color. Red oak typically have a symmetrical form in the open but the form will vary in the forest. The red oak can typically be found in moist upland areas and has the farthest northern range of native oaks extending up into Canada. The red oak bark is brown to black on older trees with wide flat top ridges and deep 'ski track' furrows in the upper branches. The acorns are 3/4" - 1 1/2" with a flat saucer shaped cap. This species is a great choice for a large shade tree in the landscape and a great contributor to biodiversity of insects and wildlife.

Cultural and Historical

The wood is not as durable as other oaks but the tree is faster growing and still has relatively strong, hard reddish brown wood often used for furniture, flooring, and fence posts.

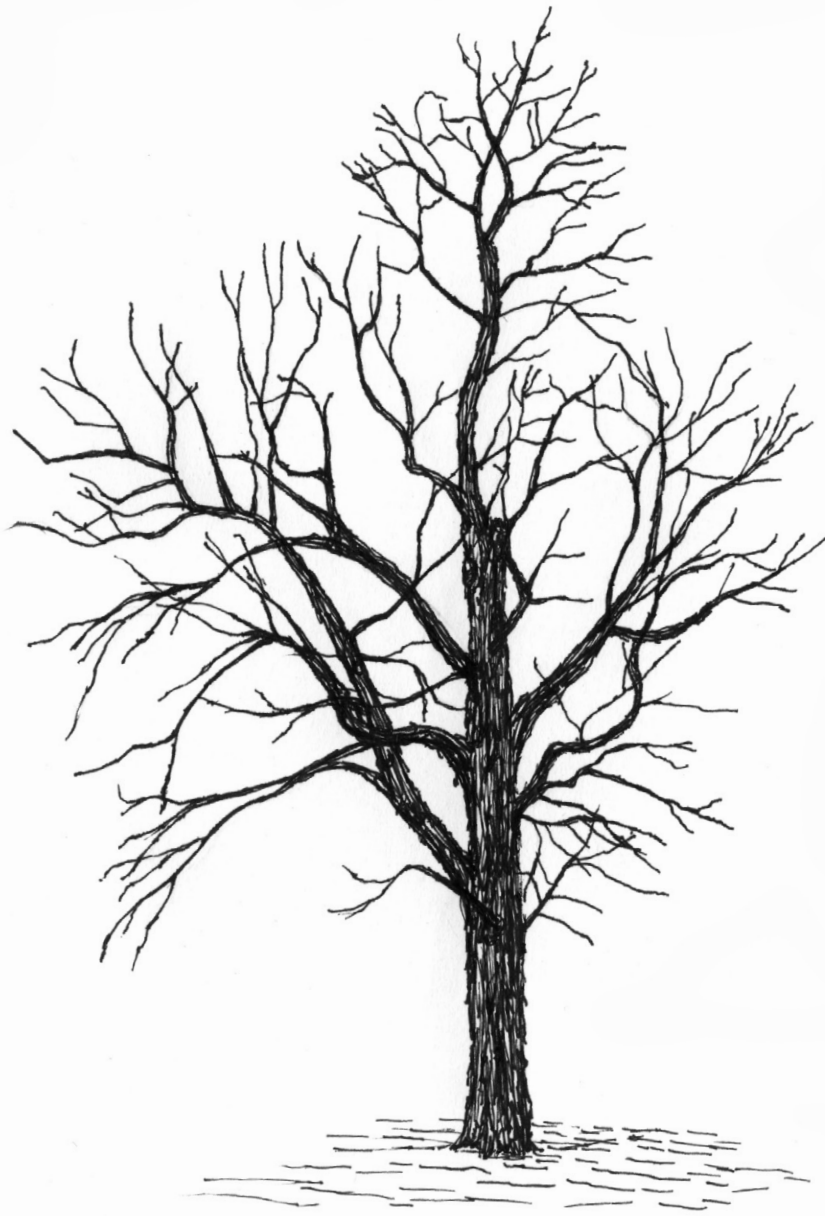
Ecological Value

The acorns are excellent food for ruffed grouse, wild turkeys, songbirds, squirrels, mice, raccoons and deer. Oak trees support a greater number of insect species than other tree species.

Sketch: A red oak tree with unusual form between a grove of trees and the road in Oakwood cemetery. The tree seems to be focusing branch growth towards the south (right side) but has probably been trimmed up to allow for vehicles to pass under it on the road.



The leaf form and fall color of a red oak sampling at Clarke's Reservation



Shagbark Hickory

Carya ovata

Shagbark Hickory is a medium to large tree with extremely textured bark and alternate, pinnate, compound 8"-16" leaves of 5 to 7 leaflets. Its fruit is brown to black, 2" diameter with a thick husk that contains a sweet edible hickory nut flesh found from August to October. The twisted form and shaggy bark gives this tree a spooky quality but a unique texture in the landscape.

Cultural and Historical

Shagbark hickory has heavy, strong, reddish brown wood that is used for veneer and has high value for use as fuel. Native Americans were known to eat hickory nuts from the shagbark and other species of hickory.

Ecological Value

The fruit is excellent food for squirrels, mice, and deer.

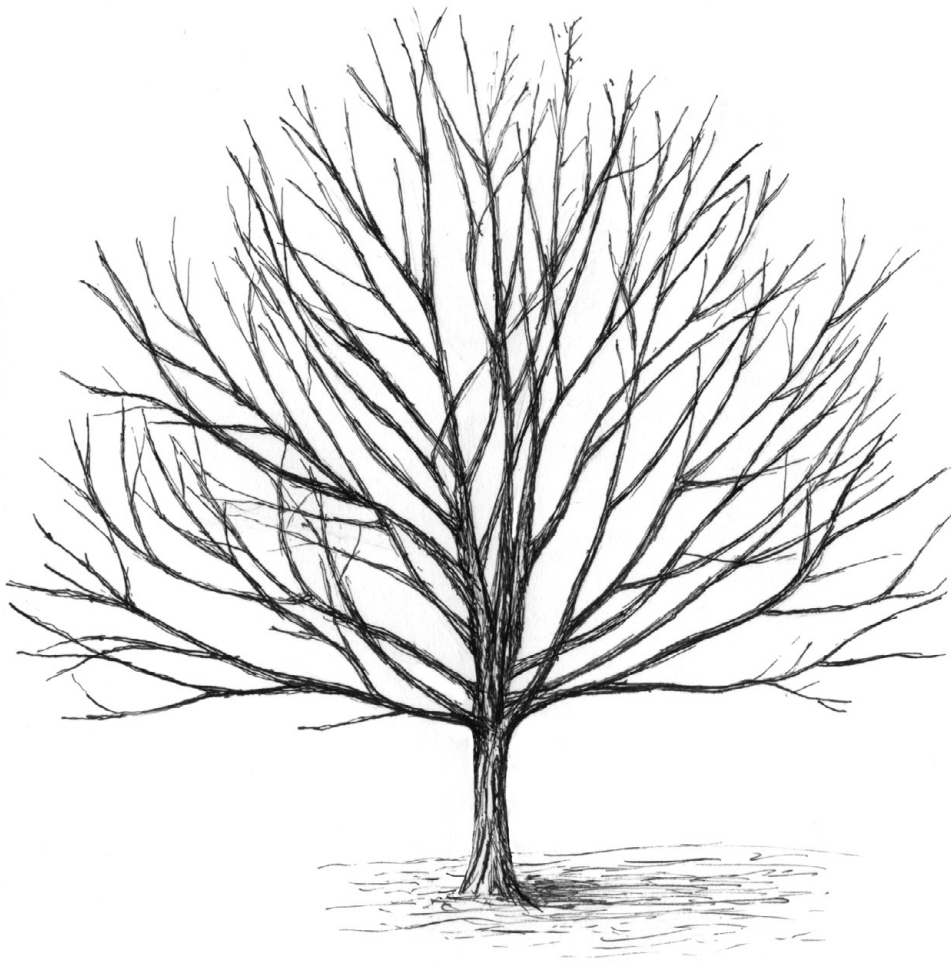


The unkempt form of a large shagbark hickory

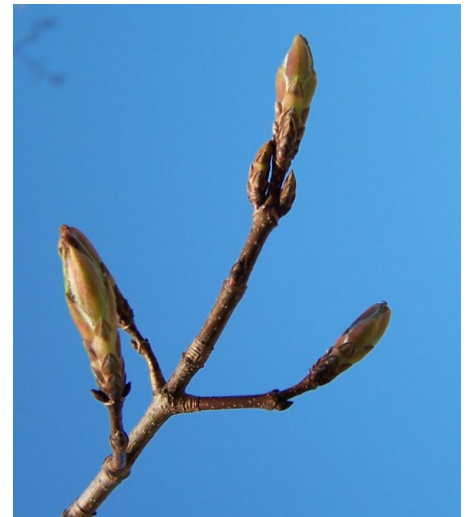


The extremely peeling shaggy bark of a large shagbark hickory tree

Sketch: This tree is planted between the road and sidewalk on Lancaster Ave. It has out grown this space and is missing large branches that were removed or damaged.



The fall color and high canopy of sugar maple trees in the forest.



Large sugar maple buds soon to leaf out, early May

Sugar Maple

Acer Saccharum

The sugar maple is a favorite in the northeast as a shade and ornamental tree for its orange and red fall color as well as its symmetrical form when grown in the open. The leaves are green, simple, opposite with five lobes and the winged seeds of the tree are in pairs of 2 with the wings parallel to each other. Flowers are yellow and emerge with the leaves a few weeks after red maple flowers. The bark is gray and becomes plated with age which helps to distinguish it from the Norway maple which has narrow furrows and darker bark. This large tree cannot handle the heat, stress, and high levels of salt that come with being a street tree but it does well in parks or large yards where conditions are less stressful. It is a dominant member of many forest cover types and can be found with beech, yellow birch, basswood, black cherry, and in the Adirondacks with red spruce.

Cultural and Historical

The sugar maple is the state tree of New York and known widely for its maple syrup production and as a hardwood timber species. In early colonial times the wood was used for rolling pins, scoops, cheese presses and other household items. Today the wood is used for general construction, furniture, floors, and cabinets.

Ecological Value

The fruit is excellent food for squirrels, mice, and deer.

Sketch: This tree is in an open grass area near the street at the intersection of Kensington and Buckingham ave where it receives full to partial sun. Typically, sugar maples in the open with full sun have a slightly more ovoid form canopy than the one drawn.