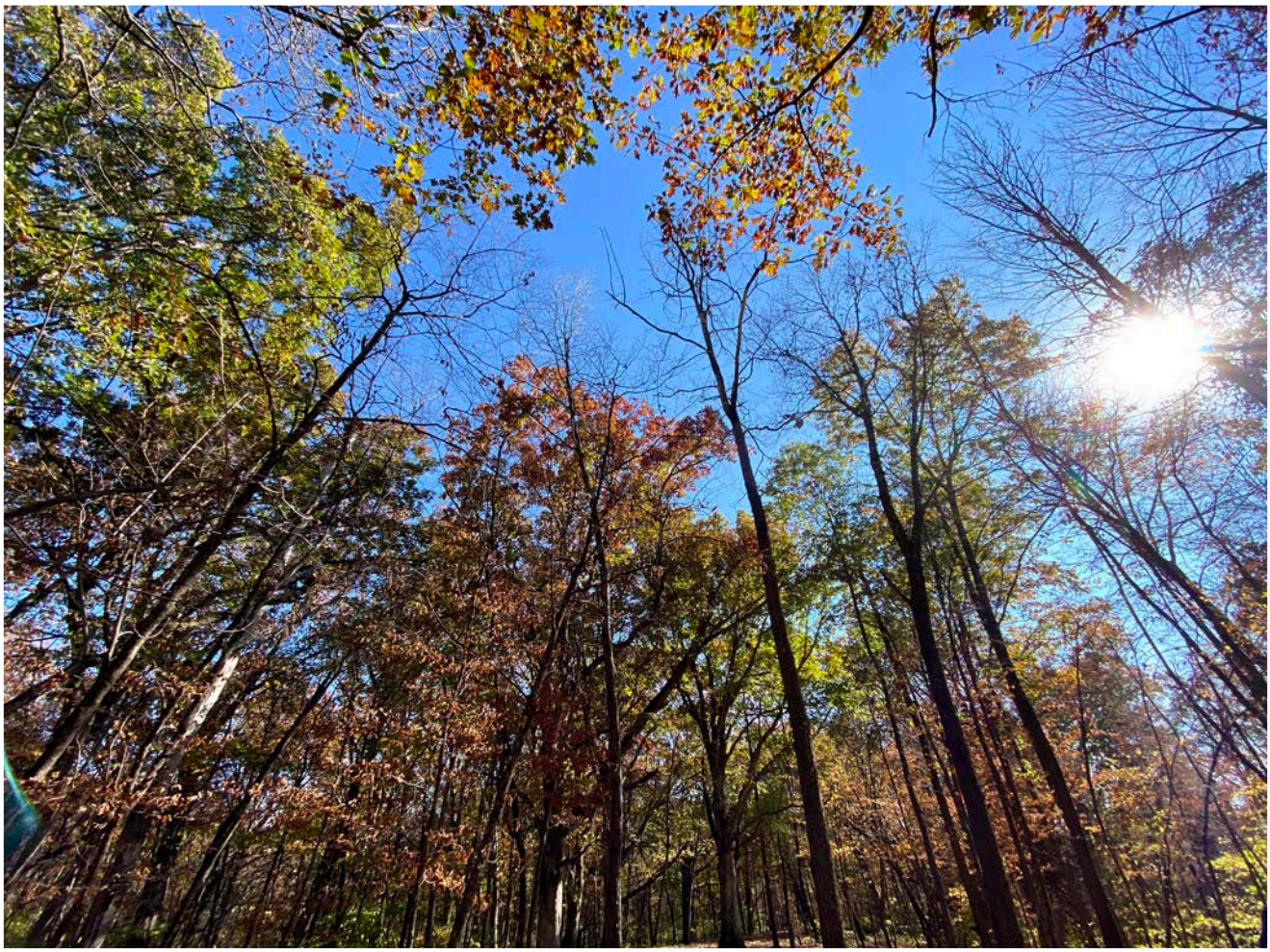
IOWA | Department of Natural Resources

Rethinking Maples

A Case for Cultivating Tomorrow's Canopy



In the face of environmental challenges and degradation, the importance of strategic tree replanting has never been more apparent. Our publication serves as a comprehensive guide to aid individuals, communities, and organizations in making informed decisions about tree species for replanting initiatives.

Trees have a big impact on the character of a neighborhood, and a diverse mix of trees is necessary for maintaining a healthy and resilient community forest. Designed for both homeowners and city staff, this publication helps guide yard and street planting by matching species needs with site characteristics. By planting a wide variety of species well-suited for the site, you can help ensure a community's tree canopy is a valuable resource for the future.

Swamp White Oak ***N***
Quercus bicolor
50-60' tall and wide
shade, storm resistant, clay sites, wet sites

N - Native to Iowa

When selecting a tree, look for one that offers the benefits desired and matches the available space. Remember to consider the mature size. Be sure to look around the yard and neighborhood, and select a species that will add to the diversity on the block. Enjoy the interesting traits that different trees present throughout the year.

Below are trees that possess certain desirable characteristics. Some species are listed in more than one category.

Vibrant Fall Color

Fall color is the primary reason most homeowners are interested in planting maples, but the trees listed below rival maples for brilliant fall colors.

Large: ***bald cypress, black oak, dawn redwood, European larch, gingko, northern pin oak, northern red oak, pin oak, river birch, scarlet oak, shingle oak, shumard oak, sweetgum, tamarack, thornless honeylocust, white oak***
Medium: ***blackgum, yellowwood***
Small: ***blue beech, serviceberry***

Fast Growing

The trees below typically grow 3 feet or more per year, once established.

Large: ***dawn redwood, London planetree, river birch, sycamore, tuliptree***

Spring Flowers

Large: ***cucumbertree magnolia, tuliptree***
Medium: ***yellowwood***
Small: ***cornelian cherry dogwood, crabapple, eastern redbud, loebner magnolia, pagoda dogwood, saucer magnolia, serviceberry, star magnolia***

Clay Tolerant

Most newer developments have little topsoil, making them tough sites for trees. Use one of these clay-tolerant species where other trees might not grow.

Large: ***American elm, American linden, bitternut hickory, bur oak, concolor fir, eastern white pine, European larch, gingko, hackberry, Kentucky coffeetree, Norway spruce, river birch, shagbark hickory, swamp white oak, tamarack, thornless honeylocust, white pine***
Small: ***blue beech, crabapple, pagoda dogwood, serviceberry***

Tolerance to Compacted Soil

Newly developed sites often have extremely compacted soils, which is a tough environment for trees to thrive. Choose one of the species below to give a new tree a fighting chance.

Large: ***American elm, American linden, bitternut hickory, bur oak, European larch, gingko, hackberry, Kentucky coffeetree, littleleaf linden, pin oak, river birch, swamp white oak, tamarack, thornless honeylocust***
Small: ***eastern redbud, flowering crabapple***

Salt Tolerant

When planting in an area affected by deicing salt, it is wise to choose a species which is salt-tolerant.

Large: ***American elm, American linden, bitternut hickory, bur oak, European larch, gingko, hackberry, Kentucky coffeetree, littleleaf linden, pin oak, river birch, swamp white oak, tamarack, thornless honeylocust***
Small: ***eastern redbud, flowering crabapple***

Storm Resistant

Tired of cleaning up branches after storms? Consider the species below, as they are better able to resist storm damage.

Large: *bald cypress, bitternut hickory, eastern hemlock, gingko, Kentucky coffeetree, littleleaf linden (Glenleven), silver linden, swamp white oak, sweetgum, white oak*
Medium: *blackgum*
Small: *blue beech, ironwood, redbud, serviceberry*

Reduced Raking

Don't like spending those beautiful fall days raking? Consider a species with smaller leaves that can be easily mowed. These trees have more dappled shade rather than full shade, and grass grows more easily beneath them. Be sure to look for seedless varieties!

Large: *Kentucky coffeetree (podless) variety, tamarack, thornless honeylocust*

Large Shade Trees

The larger the tree, the more shade it provides. Select these trees for the most shade.

northern red oak, scarlet oak, shumard oak, black oak, bur oak, swamp white oak, chinkapin oak, white oak, shingle oak, pin oak, northern pin oak, gingko, sweetgum, tuliptree, cucumbertree magnolia, London planetree, sycamore, American linden, silver linden, littleleaf linden, hackberry, shagbark hickory, bitternut hickory

Small Space Trees

For smaller yards or under power lines, choose from these smaller stature trees.

cornelian cherry dogwood, blue beech, eastern redbud, flowering crabapple, leobner magnolia, pagoda dogwood, saucer magnolia, serviceberry, star magnolia

Pollinator and Songbird Attractors

Choose from the species below to benefit pollinators and songbirds.

Larger: *American elm, American linden, catalpa, hackberry, oak species, river birch, tuliptree*
Small: *blue beech, flowering crabapple, pagoda dogwood, redbud, serviceberry*

Improve yards, neighborhoods, communities and the planet by planting a tree. Trees affect the way people feel and view the world around them. A few of the benefits of neighborhood trees include:

INCREASED HOME VALUES

Yard trees increase resale value of homes by 3 to 15 percent.

SAFER NEIGHBORHOODS

Neighborhoods with more trees have fewer reported crimes, less graffiti, vandalism and littering, and fewer acts of domestic violence.

STRONGER COMMUNITY CONNECTIONS

People report significantly better relations, and stronger feelings of unity and cohesion with their neighbors when their neighborhoods have more trees.

Thornless Honeylocust ***N***
Gleditsia triacanthos
Skyline, Northern Acclaim, Shademaster
30-70' tall and wide
fall color, filtered shade, reduced raking, drought tolerant, clay tolerant

Serviceberry ***N***
Amelanchier X ***grandiflora***
20-25' tall and wide
spring flowers, fall color, shade, storm resistant, clay tolerance, small space, under powerlines, edible fruit, pollinator and songbird species single or multi-stemmed

More specific tree information follows on the next pages. Be sure to look at all the benefits and requirements of each tree. Some species also list recommended varieties.

Common Name ***N*** = Native to Iowa
Genus species
Variety
Mature dimensions
characteristics

Large Shade Trees

Typically, the larger the tree, the greater the benefits. These trees should be selected for sites with no overhead powerlines and plenty of room to grow.

Black Oak *N*
Quercus velutina
50-60' tall and wide
fall color, shade, clay sites

Bur Oak *N*
Quercus macrocarpa
70-80' tall and wide
shade, storm resistant, clay sites, wet sites

Chinkapin Oak *N*
Quercus muehlenbergii
40-80' tall; 40-50' wide
shade

Northern Pin Oak *N*
Quercus ellipsoidalis
60-80' tall; 20-40' wide
fall color, shade, high ph soils

Northern Red Oak *N*
Quercus rubra
60-75' tall and wide
fall color, shade

Scarlet Oak
Quercus coccinea
70-75' tall; 40-50'wide
fall color, shade

Shingle Oak *N*
Quercus imbricaria
50-80' tall and wide
fall color, shade, windbreak

Shumard Oak
Quercus shumardii
40-60' tall and wide
fall color, shade

White Oak *N*
Quercus alba
50-80' tall and wide
fall color, shade, storm resistant

SPACING RECOMMENDATIONS FOR LARGE SHADE TREES

Before planting between the sidewalk and street, check city permit requirements and list of approved species. For large-growing shade trees, the grass strip between the sidewalk and street should be eight feet wide. Plant large-growing shade trees at least 25 to 30 feet apart. If planting near a building, the tree should be a distance of at least half its mature width from the building to prevent interference from the branches.

N = Native to Iowa

River Birch *N*
Betula nigra
40-60’ tall and wide
fall color, shade, clay sites, wet sites, single or multi-stemmed

Shellbark Hickory *N*
Carya laciniosa
75-100’ tall; 50-75’ wide
full/partial sun, wet soils, slow growing

Shagbark Hickory *N*
Carya ovata
70-90’ tall; 50-70’ wide
shade, clay tolerant, storm resistant

Hackberry *N*
Celtis occidentalis
40-60’ tall and wide
shade, wet sites, dry sites, pollinator & songbird species

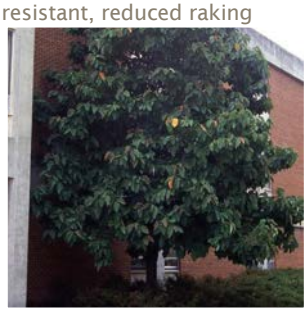
Ohio Buckeye
Aesculus glabra
30-40’ tall; 30-40’ wide
full/partial sun, wet soils, slow growing

Gingko
Gingko-seedless cultivars
Autumn Gold, Presidential Gold
50-80’ tall and wide
fall color, shade, storm resistant, reduced raking

Kentucky Coffeetree *N*
Gymnocladus dioicus
60-75’ tall; 40-50’wide
storm resistant, reduced raking *(seedless only)*, shade

Sweetgum
Liquidambar styraciflua
75’ tall; 40-50’ wide
fall color, shade, storm resistant, hardy to zone 5 only

Tuliptree
Liriodendron tulipfera
70-90’ tall; 35-50’ wide
shade, wet sites, fast growing, spring flowers



Cucumbertree Magnolia
Magnolia acuminata
50-80’ tall and wide
shade, spring flowers

London Planetree
Platanus* X *acerfolia
Exclamation
70-100’ tall; 65- 80’ wide
shade, wet sites, fast growing

Sycamore *N*
Platanus occidentalis
75-100’ tall and wide
shade, wet sites, fast growing

American Linden *N*
Tilia Americana
American Sentry, Front Yard
60-80’ tall; 20-40’ wide
shade, pollinator species, wet sites, clay tolerant

Littleleaf Linden
Tilia cordata
Glenleven
60-70’ tall; 30-40’ wide
shade, clay tolerant, storm resistant

Silver Linden
Tilia tomentosa
50-70’ tall; 25-45’ wide
shade, storm resistant, clay sites

Common Persimmon
Diospyros virginiana
30-60’ tall; 25-35’ wide
full/partial sun, moist, well-drained soils, moderate growth rate

Consider a layout to attract songbirds and other small wildlife. Clumped design will make for a very "natural" look, while providing suitably thick winter shelter. Contact your local District Forester for more information.

Bigtooth Aspen
Populus grandidentata
75-100' tall and wide
full/partial sun, wet soils, fast growing

Swamp White Oak
Quercus bicolor
50-60' tall; 50-60' wide
full sun, moist/acidic/ well drained soils, moderate growth rate

Black Walnut
Juglans nigra
50-75' tall; 30-50' wide
full sun, alkaline, moist, well-drained soils

Osage Orange
Maclura pomifera
30-40' tall; 20-40' wide
full sun, moist, well-drained soils, moderate growth rate

Heritage Oak
Quercus x macdaniellii
60-80' tall; 40-50'wide
full sun, moist, well-drained soils

Northern Pecan
Carya illinoinensis
75-100' tall; 40-70'wide
full sun, rich soils, slow growing

Pignut Hickory
Carya glabra
50-60' tall; 25-35' wide
full sun, dry, moist, well-drained soils, slow growing

Quaking Aspen
Populus tremuloides
40-50' tall; 20-30' wide
full sun, fast growing

Rock Elm
Ulmus thomasii
80-100' tall; 70-90 wide
full sun, moist/well-drained soils, moderate growth rate

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Katsura Tree
Cercidiphyllum
40-60’ tall; 30-60’ wide
full sun, wet soils,
moderate growing

Thornless Honeylocust
Gleditsia triacanthos
30-70’ tall; 30-70’ wide
full sun, moist/well-drained soils, fast growing

Yellow Birch
Betula alleghaniensis
60-75’ tall; 60-75’wide
full sun, acidic/moist/well-drained soil,
moderate growth rate

Northern Catalpa
Catalpa speciosa
40-60’ tall; 30-60’ wide
full sun, wet soils,
moderate growing

Medium Shade Trees

These trees can provide very nice shade for a smaller area. If planting between the sidewalk and street, a six-foot wide grass strip is required.

Blackgum
Nyssa Sylvatica
30-50’ tall; 20-30’ wide
fall color

Ironwood (Hophornbeam) ***N Ostrya virginiana***
25-40’ tall; 20-40’ wide
small space, storm resistant

Yellowwood
Cladrastis kentukea
30-50’ tall; 40-55’wide
spring flowers, fall color,

Low-Growing Trees

These typically stay under 30 feet tall and are suitable for smaller spaces and under powerlines. If planting between the sidewalk and street, a minimum five-foot wide grass strip is necessary.

Blue Beech (Hornbeam) ***N***
Carpinus caroliniana
20-30' tall and wide
fall color, small space, under powerlines, storm resistant, clay tolerant

Eastern Redbud ***N***
Cercis canadensis
20-30' tall; 25-35' wide
spring flowers, storm resistant, small space, under powerlines, single or multi-stemmed

Flowering Crabapple
Malus sp.
12-25' tall and wide
spring flowers

Loebner Magnolia
Magnolia X ***loebneri***
Leonard Messel, Merrill, Ballerina
20-30' tall and wide
spring flowers,
typically multi-stemmed

Pagoda Dogwood ***N***
Cornus alternifolia
15-25' tall and wide
spring flowers, pollinator and songbird species, small space, under powerlines, requires partial to full shade

Saucer Magnolia
Magnolia X ***soulangeana***
20-30' tall and wide
spring flower, hardy to zone 5 only

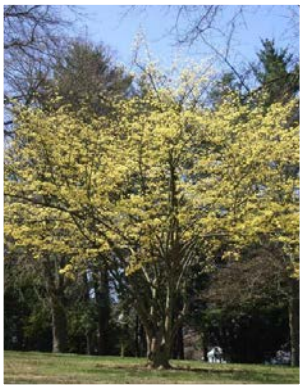
Star Magnolia
Magnolia stellata
15-20' tall; 40-50'wide
spring flowers,
typically multi-stemmed

Blackhaw Viburnum ***N***
Viburnum prunifolium
10-15' tall; 5-10'wide
partial/full shade,
moist/well-drained soil,
moderate growth rate

Serviceberry ***N***
Amelanchier
15-25' tall and wide
shade/partial shade,
moist/well-drained soils,
moderate growth rate

Dwarf Hackberry
Celtis tenuifolia
20-30' tall; 15-25' wide
shade/partial shade,
moist/well-drained soils,
slow growth rate

Kousa Dogwood
Cornus Kousa
20-30' tall; 20-30'wide
full/partial shade, acidic/
moist/well-drained soils,
slow growth rate



Cornelian Cherry Dogwood *N*
Carpinus caroliniana
20-30’ tall; 15-20’ wide
full/partial shade, alkaline/moist/well-drained soils, slow growth rate

Eastern Wahoo *N*
Euonymus atropurpureus
15-20’ tall and wide
full/partial shade, alkaline/moist/well-drained soils, slow growth rate

Witch Hazel *N*
Hamamelis virginiana
15-20’ tall; and wide
full/partial shade, alkaline/moist/well-drained soils, slow growth rate

Elizabeth Magnolia
20-30’ tall; 12-20’ wide
full sun, alkaline/moist/well-drained soils, moderate growth rate

Dwarf Chinkapin Oak
Quercus prinoides
20-30’ tall and wide
full sun, moist/well-drained soils, moderate growth rate

Bladdernut *N*
Staphylea trifolia
10-15’ tall; 10-20’ wide
partial/full shade, moist/well-drained soil, moderate growth rate

Nannyberry *N*
Viburnum lentago
15-25’ tall and wide
full/partial shade, alkaline/moist/well-drained soils, slow growth rate

N = Native to Iowa

Deciduous Conifers

These trees resemble evergreens, but lose their needles in winter.

Bald Cypress
Taxodium distichum
50-70' tall; 20-30' wide
shade, fall color, storm resistant, wet sites

Dawn Redwood
Metasequioia glyptostroboides
70-100' tall; 25' wide
shade, fall color, fast growing, hardy to zone 5 only

European Larch
Larix decidua
70-75' tall; 25-30' wide
fall color, clay sites

Tamarack
Larix laricina
Glenleven
30-50' tall; 20-35' wide
clay tolerant, fall color

Evergreens

Concolor Fir
Abies concolor
40-70' tall; 20-30' wide
shade, clay tolerant

Eastern Hemlock
Tsuga canadensis
40-70' tall; 25-35' wide
shade, storm resistant

Norway Spruce
Picea abies
40-60' tall; 25-30' wide
shade, clay tolerant, windbreak

White Pine ***N***
Pinus strobus
50-80' tall; 20-40' wide
shade, clay tolerant

Eastern Redcedar
Juniperus virginiana
30-40' tall; 20-30' wide
full/partial sun, well-drained/moist/sandy soils, moderate growth rate

White Spruce
Picea glauca
40-60' tall; 10-20' wide
full sun, well-drained/ moist soils, moderate growth rate

Black Hills Spruce
Picea glauca
40-60' tall; 10-20' wide
full sun, well-drained/ moist soils, moderate growth rate

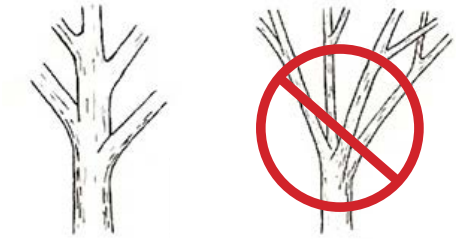
Serbian Spruce
Picea omorika
40-60' tall; 15-20' wide
full sun, well-drained/ moist soils, moderate growth rate

Selecting and Planting Your Tree

Tree selection shouldn't be based on species alone. Selecting a quality tree from the nursery will help ensure generations benefit from the tree. Look for the following for a quality tree selection:

1. Trunk diameter and taper is sufficient to keep the tree vertical without the support of a nursery stake.

2. Large-growing shade trees should have a central leader – a single, relatively straight vertical main stem, free of co-dominant stems



3. Main branches are well-spaced.

4. No circling or kinked roots in the rootball. Purchasing a tree in an "air-pruned" pot is the best way to avoid this. If purchasing a tree in a hard plastic pot, slip the tree out of the pot and inspect the rootball to ensure there are no woody roots circling the stem or outside of the rootball. The uppermost roots should be within one inch of the soil surface.

CONDITION OF THE ROOTS

· Locate where the trunk flares out and becomes the roots. This spot, called the root flare, should be located at ground level, not below. The flare turns into the large supporting roots. They may be visible on the surface or covered by a couple inches of soil. These large supporting roots will help identify the correct depth to dig the hole. Planting trees too deep causes premature death from circling or girdling roots, and increases the likelihood of the tree falling over in high winds.
· Inspect the root mass for circling and girdling roots by placing the tree on its side and removing the entire container. If the tree is pot-bound and has roots circling the root mass, cut off the entire outside ¼-inch of the root mass, including the bottom, with a sharp shovel or pruning saw.

SIZE AND SHAPE OF THE HOLE

· Dig a hole with a diameter two to three times the width of the tree's container. Typically the hole should be 10 to 12 inches deep, but look for the root flare on the tree. This should be at or slightly above ground level after planting.
· Loosen up surface roots and straighten out any large roots.
· Keep the root flare of the tree even with the ground level.
· Be sure the tree is straight before backfilling the planting hole.

BACKFILLING THE HOLE

· Do not substitute planting hole soil with mulch, compost or fertilizers.
· Backfill the planting hole, taking care to break up soil chunks.
· Lightly step around the tree base to firm up soil.

MULCHING

· Place three to four inches of organic mulch around the tree in a saucer shape, 18 to 36 inches wide. Organic mulch, such as composted wood chips, greatly enhances tree growth.
· Keep organic mulch three inches away from the base of the tree to prevent moisture buildup on the bark.

INITIAL WATERING

· Water the tree slowly and thoroughly to eliminate air pockets in soil. Initial watering should be approximately 10 to 15 gallons of water or until the water stands for a few seconds. Water is critical for tree survival during the first few years.
· Water two gallons for every inch diameter of the tree trunk one to three times per week for the first two years. During drought, water more frequently.

Department of Natural Resources