



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, ginkgo, 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 linden, bitternut hickory, bur oak, concolor fir, eastern white pine, European larch, ginkgo, 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 linden, bitternut hickory, bur oak, European larch, ginkgo, 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 linden, bitternut hickory, bur oak, European larch, ginkgo, 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 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



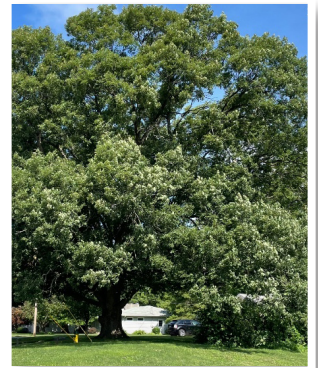
Scarlet Oak
Quercus coccinea
70-75' tall; 40-50' wide
fall color, shade



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



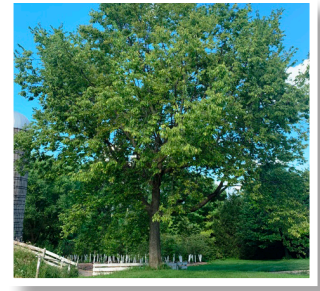
River Birch N
Betula nigra
 40-60' tall and wide
 fall color, shade, clay sites, wet sites, single or multi-stemmed



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



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



Kentucky Coffeetree N
Gymnocladus dioica
 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 tulipifera
 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



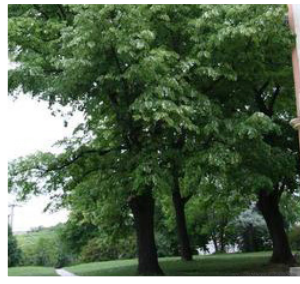
Sycamore N
Platanus occidentalis
 75-100' tall and wide
 shade, wet sites, fast growing



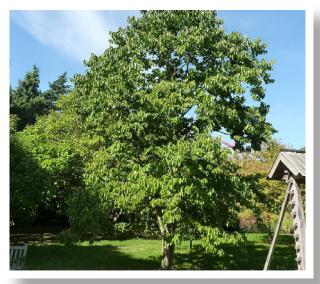
American Linden N
Tilia Americana
American Sentry, Front Yard
 60-80' tall; 20-40' wide
 shade, pollinator species, wet sites, clay tolerant



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 illinoensis
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



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

N = Native to Iowa



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

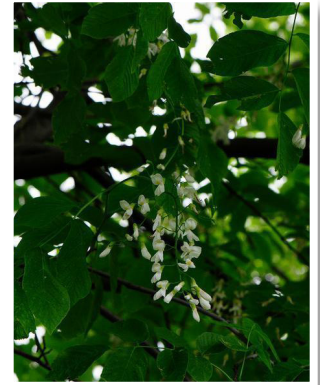
These trees can provide very nice shade for a smaller area. If planting between the sidewalk and street, a six-foot wide grass strip is required.



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



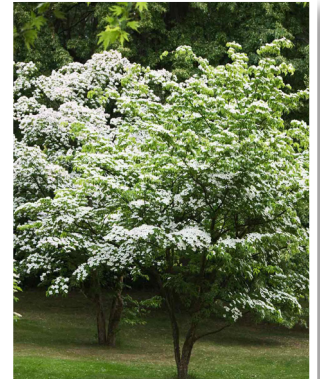
Blackhaw Viburnum *N*
Viburnum prunifolium
10-15' tall; 5-10' wide
partial/full shade,
moist/well-drained soil,
moderate growth rate



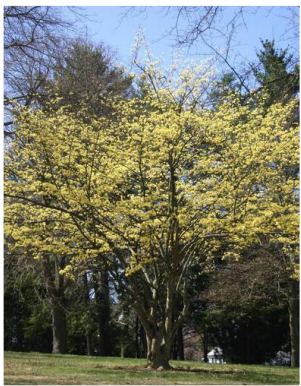
Serviceberry *N*
Amelanchier
15-25' tall and wide
shade/partial shade,
moist/well-drained soils,
moderate growth rate



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

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
*Metasequoia
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

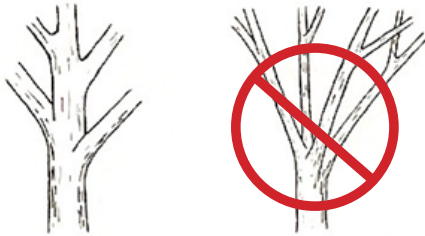
SELECTING AND PLANTING YOUR TREE

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

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