

# SHADE TREES

Genus	Species	Common Name	Evergreen	Size	Light needs	Moisture preference	Street Tree	Pollution Resistant	Powerline Compat-ible	Use in stormwater solutions	Native Range	Visual Attraction/ food source	Shade Tree	Minimum soil volume required - Cubic Ft	Notes for use/Disease susceptibility	Chesapeake Bay Preservation Ordinance Size requirement (height or caliper)	Chesapeake Bay Preservation Ordinance Minimum Spread requirement (Feet)	Chesapeake Bay Preservation Ordinance Coverage (including native bonus)
Acer	negundo	Boxelder		Large	Full to partial sun	High					Local	Striking fall color	✓	1200	Susceptible to limb breakage. Use for restoration or open areas. Great for stream restoration	2 - 2.5 Inch caliper	5 Ft.	393-75
Acer	rubrum	Red maple		Large	Full to partial sun	High				✓	Local	Striking fall color	✓	1200	Can have issues with girdling roots. Prefers a wet environment. Limit use due to overplanting	2 - 2.5 Inch caliper	5 Ft.	393-75
Asimina	triloba	Pawpaw		Medium	Full sun	High		✓	✓		Local	Large leaves, red flowers, large edible fruit	✓	900	Edible fruit. Must be pollinated from a different tree to bear fruit. Only use as street tree in low density areas	>1 Inch caliper	3 Ft.	218-75
Betula	nigra	River Birch		Medium	Full sun to shade	High	✓	✓		✓	Local	Attractive bark	✓	900	Single-trunked for street trees, multi-trunk in large plantings. Use sparingly, in wet areas with significant soil space	8-10 Ft tall	3 Ft.	218-75
Carya	cordiformes	Bitternut hickory		Medium-Large	Full sun	Low	✓				Local	Striking fall color	✓	1200	Must be transplanted at very young age and size	>1 Inch caliper	5 Ft.	312-5
Carya	glabra	Pignut hickory		Medium-Large	Full sun to shade	Low					Local	Striking fall color	✓	1200	Must be transplanted at very young age and size	>1 Inch caliper	5 Ft.	312-5
Carya	tomentosa	Mockernut hickory		Medium-Large	Full sun	Low					Local	Striking fall color	✓	1200	Must be transplanted at very young age and size	>1 Inch caliper	5 Ft.	312-5
Carya	ovata	Shagbark hickory		Medium-Large	Full sun	Low	✓	✓			Region	Striking fall color	✓	1200	Must be transplanted at very young age and size	>1 Inch caliper	5 Ft.	312-5
Celtis	laevigata	Sugar hackberry		Medium-Large	Full to partial sun	High	✓	✓			Local	Attractive bark	✓	1200		2 - 2.5 Inch caliper	5 Ft.	312-5
Celtis	occidentalis	Common hackberry		Large	Full to partial sun	High	✓	✓		✓	Local	Attractive bark	✓	1200		2 - 2.5 Inch caliper	5 Ft.	393-75
Chamaecyparis	thyoides	Atlantic whitecedar	✓	Small-Medium	Partial sun to shade	High				✓	Region	Evergreen, striped bark	✓	900	Single-trunked for street trees, multi-trunk in large plantings. Can form damaging cankers, which can be controlled by selective pruning.	6-7 Ft. tall	3 Ft.	137-5
Diospyros	virginiana	Common persimmon		Medium	Full sun to shade	Low				✓	Local	Edible Fruit, unusual black bark	✓	900	Single-trunked for street trees, multi-trunk in large plantings. Fruit is susceptible to Cedar Apple Rust, which does not otherwise affect the tree's health.	>1 Inch caliper	3 Ft.	218-75
Fagus	grandifolia	American beech		Large	Full to partial sun	Low					Local	Smooth bark, edible nuts	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393-75
Gleditsia	triacanthos	Honeylocust		Medium-Large	Full sun	Any	✓	✓			Region	White clustered flowers. Large seedpods	✓	1200	Use only fruitless varieties as street tree, like 'Inermis'. Roots may be aggressive	2 - 2.5 Inch caliper	5 Ft.	312-5
Gymnocladus	dioicus	Kentucky coffeetree		Medium	Full sun	Moderate	✓	✓			Region	Attractive bark	✓	1200		2 - 2.5 Inch caliper	3 Ft.	218-75
Ilex	Opaca	American holly	✓	Medium	Full to partial sun	High				✓	Local	Attractive winter berries	✓	900		6-7 Ft. tall	3 Ft.	218-75
Juglans	nigra	Black Walnut		Large	Full sun	Moderate					Local	Large edible fruit	✓	1200	Will kill some plants beneath it. Specimen tree use only. Susceptible to Thousand canker disease. Must be transplanted at very young age and size.	1 3/4 - 2 Inch caliper	5 Ft.	393-75

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<i>Juniperus</i>	<i>virginiana</i>	Eastern redcedar	✓	Small-Medium	Full sun	Low	✓	✓	✓		Local	Evergreen	✓	900		6-7 Ft. tall	3 Ft.	137.5
<i>Liquidambar</i>	<i>styraciflua</i>	Sweetgum		Medium	Full to partial sun	High	✓			✓	Local	Striking fall color	✓	1200	Provide significant root space for this tree. Limit use as street tree due to tendency to destroy pavement. Acceptable for medians	2 - 2.5 Inch caliper	3 Ft.	218.75
<i>Liriodendron</i>	<i>tulipifera</i>	Tuliptree		Medium	Full to partial sun	Moderate					Local	Tulip-shaped flowers and leaves	✓	1200		2 - 2.5 Inch caliper	3 Ft.	218.75
<i>Magnolia</i>	<i>acuminata</i>	Cucumbertree		Medium	Full sun	Moderate					Local	White flowers	✓	1200	Hybrids acceptable	6-7 Ft. tall	3 Ft.	218.75
<i>Morus</i>	<i>rubra</i>	Red mulberry		Medium-Large	Full to partial sun	High					Local	Edible fruit, larger than non-native mulberry	✓	1200	Do not confuse with <i>Morus alba</i> (White mulberry), which is an invasive plant	>1 Inch caliper	5 Ft.	312.5
<i>Nyssa</i>	<i>sylvatica</i>	Black tupelo		Medium-Large	Full to partial sun	High	✓	✓		✓	Local	Striking fall color	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	312.5
<i>Ostrya</i>	<i>virginiana</i>	Eastern hophornbeam		Medium	Partial sun to shade	Low	✓	✓			Local	Hop-shaped fruit	✓	1200		>1 Inch caliper	3 Ft.	218.75
<i>Pinus</i>	<i>echinata</i>	Shortleaf pine	✓	Medium	Full sun	Low		✓			Local	Evergreen	✓	1200		6-7 Ft. tall	3 Ft.	218.75
<i>Pinus</i>	<i>rigida</i>	Pitch pine	✓	Medium	Full sun	Moderate		✓			Local	Evergreen	✓	1200		6-7 Ft. tall	3 Ft.	218.75
<i>Pinus</i>	<i>taeda</i>	Loblolly pine	✓	Medium	Full sun	Low		✓		✓	Local	Evergreen	✓	1200		6-7 Ft. tall	3 Ft.	218.75
<i>Pinus</i>	<i>virginiana</i>	Virginia pine	✓	Medium	Full sun	Low					Local	Evergreen	✓	1200		6-7 Ft. tall	3 Ft.	218.75
<i>Platanus</i>	<i>occidentalis</i>	American sycamore		Large	Full sun	Any				✓	Local	Large leaves, interesting seeds	✓	1200	Susceptible to anthracnose	2 - 2.5 Inch caliper	5 Ft.	393.75
<i>Prunus</i>	<i>serotina</i>	Black cherry		Medium-Large	Full sun	Low					Local	White flowers	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	312.5
<i>Quercus</i>	<i>alba</i>	White oak		Large	Full to partial sun	High		✓			Local	Silver-white bark	✓	1200	Provide significant root space for this tree.	1 3/4 - 2 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>bicolor</i>	Swamp white oak		Large	Full to partial sun	High	✓	✓		✓	Local	Attractive peeling bark, multi-colored leaves	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>coccinea</i>	Scarlet oak		Large	Full sun	Low	✓	✓			Local	Striking fall color	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>falcata</i>	Southern red oak		Large	Full sun	Low	✓	✓			Local	Striking fall color	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>imbricaria</i>	Shingle oak		Large	Full sun	Moderate	✓				Local	Semi-evergreen	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>marilandica</i>	Blackjack oak		Medium	Partial shade	Low					Local	Blocky bark	✓	1200		6-7 Ft. tall	3 Ft.	218.75
<i>Quercus</i>	<i>michauxii</i>	Swamp chestnut oak		Large	Full sun	High					Local	Interesting leaves	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>montana</i>	Chestnut oak		Large	Full sun	Low					Local	Silver-grey bark	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>pagoda</i>	Cherrybark oak		Large	Full sun	Low					Local	Cherry-like bark	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>palustris</i>	Pin oak		Medium-Large	Full sun	High	✓			✓	Local	Even form, small acorns	✓	1200		2 - 2.5 Inch caliper	5 Ft.	312.5
<i>Quercus</i>	<i>phellos</i>	Willow oak		Medium-Large	Full sun	Any	✓	✓		✓	Local	Thin, sun-filtering leaves	✓	1200		2 - 2.5 Inch caliper	5 Ft.	312.5
<i>Quercus</i>	<i>rubra</i>	Northern Red oak		Large	Full sun	Low	✓	✓			Local	Striking fall color	✓	1200		2 - 2.5 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>shumardii</i>	Shumard Oak		Large	Full sun	Low	✓	✓			Local	Striking fall color	✓	1200		2 - 2.5 Inch caliper	5 Ft.	393.75
<i>Quercus</i>	<i>stellata</i>	Post oak		Medium-Large	Full sun	Low	✓				Local	Cross-shaped leaves	✓	1200		>1 Inch caliper	5 Ft.	312.5

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Quercus	velutina	Black oak		Medium-Large	Full sun	High					Local	Striking fall color	✓	1200		2 - 2.5 Inch caliper	5 Ft.	312.5
Quercus	hemisphaerica	Darlington oak		Medium-Large	Full sun	Low	✓				Region	Thin, sun-filtering leaves	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	312.5
Quercus	macrocarpa	Bur oak		Large	Full sun	Low	✓	✓			Region	Attractive leaves and fruit	✓	1200	Needs significant rooting space	1 3/4 - 2 Inch caliper	5 Ft.	393.75
Quercus	nigra	Water oak		Large	Full to partial sun	High				✓	Region	Evergreen	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393.75
Quercus	lyrata	Overcup oak		Large	Full to partial sun	High to Moderate	✓				Region	Attractive leaves and fruit	✓	1200		1 3/4 - 2 Inch caliper	5 Ft.	393.75
Robinia	pseudoacacia	Black locust		Medium	Full sun	Any					Local	Large clusters of white flowers	✓	900		2 - 2.5 Inch caliper	3 Ft.	218.75
Salix	nigra	Black willow		Medium-Large	Full to partial sun	High				✓	Local	Slender leaves	✓	900		2 - 2.5 Inch caliper	5 Ft.	312.5
Sassafras	albidum	Sassafras		Medium	Full to partial sun	Low			✓		Local	Striking fall color, variegated leaves, pleasant fragrance	✓	900		6-7 Ft. tall	3 Ft.	218.75
Taxodium	ascendens	Pondcypress		Medium-Large	Full sun	High	✓	✓		✓	Region	Deciduous conifer	✓	1200		2 - 2.5 Inch caliper	5 Ft.	312.5
Taxodium	distichum	Baldcypress		Medium-Large	Full sun	High	✓	✓		✓	Region	Deciduous conifer	✓	1200		2 - 2.5 Inch caliper	5 Ft.	312.5
Tilia	americana	American Linden		Large	Full sun	High	✓				Local	White flowers, striking fall color	✓	1200	Use sparingly, in wet areas with significant soil space	2 - 2.5 Inch caliper	5 Ft.	393.75
Tsuga	canadensis	Eastern hemlock	✓	Medium	Partial shade	Moderate					Local	Evergreen	✓	1200	Susceptible to Hemlock woolly adelgid	6-7 Ft. tall	3 Ft.	218.75
Ulmus	americana	American elm		Large	Full sun	Any	✓	✓		✓	Local	Attractive bark	✓	1200	Plant Dutch elm disease resistant cultivars only. 'Jefferson' and 'Valley Forge' have shown good resistance. 'Princeton' is not acceptable, due to poor resistance and form	2 - 2.5 Inch caliper	5 Ft.	393.75
Ulmus	rubra	Slippery elm		Large	Partial sun to shade	Any					Local	Attractive bark	✓	1200		2 - 2.5 Inch caliper	5 Ft.	393.75

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Right tree, right place: Every species of tree has different requirements. Understand the space in which you are planning for tree planting before finalizing your selection. Work with a qualified professional, or reach out to your local extension agent for assistance.

Arlington County has a Natives Preferred policy for planting on County property, and local native trees are required in Resource Protection Areas, Natural Lands or Natural Resource Conservation Areas

This spreadsheet serves as Appendix E to the Chesapeake Bay Preservation Ordinance Guidance Manual

## Glossary:

Genus	A group of plants marked by common characteristics, like Quercus (Oaks), Acer (Maples), or Cornus (Dogwoods)
Species	An individual type of plant, capable of interbreeding within its designation, like Quercus stellata (Post oak), or Tilia americana (American linden)
Common Name	The common description of a plant, like American Holly, or Tuliptree. A tree can have several common names, which is why latin names are often preferred.
Evergreen	A tree which retains its leaves over the winter. These trees do lose leaves or needles over time, but at a slower rate than deciduous trees
Size	Mature size (usually within 30-50 years, depending on species, but all trees continue to grow). Small trees typically stay under 20 ft tall, medium under 40 ft, and large trees can reach up to 100 ft tall
Growth Rate	The speed at which a species grows to its mature size. Keep in mind a fast-growing small tree may grow fast for its species, but due to genetic limitations, may not reach the size of a slow-growing large tree
Light needs	The light requirements for a tree to grow optimally. Trees preferring full sun should be in full sun for at least 6 hours a day, while trees preferring shade can live with less than 3 hours of sunlight a day
Moisture preference	The need for dry, moderate, or wet soils. This can be accommodated through proper irrigation, maintenance and/or design
Street Tree	Trees well suited for planting along roads, or in tree pits, when specified as upright or vase-shaped form for small trees, and limbed up to a safe height, and not obstruct view for traffic. Trees with large fruit can be planted in low density areas
Pollution Resistant	Trees well suited for planting in tough areas with high pollution from both the air, as well as salt spray from the road. These species are often also well-suited for stormwater control facilities.
Powerline Compatible	Species that may be acceptable to be planted below powerlines, due to size or stature. These species have not been reviewed by Dominion Virginia Power, and utility companies maintain the right to prune or trim any trees or vegetation
Use in stormwater solutions	Trees that may be appropriate to be planted in regulated stormwater BMPs. Street tree BMPs not currently permitted
Native Range	Nativity, either locally (native to Arlington, Alexandria, or Fairfax) or regionally (native to Virginia, West Virginia, Maryland, Delaware, North Carolina, Washington DC, New Jersey, or Pennsylvania)
Visual Attraction/food source	Interest from the tree that sets it apart from other trees, or potential food source. Do your research before eating, and confirm your identification.
Shade Tree	A tree likely to grow to a size where it will cast significant shade on the surrounding environment, reducing energy costs and urban heat island effect.
Suggested Cultivars	Cultivars of the species that have shown promise in our landscape and provide added aesthetic value, or may be more resistant to disease or other pathogens
Minimum Soil Volume	Minimum soil volumes required to allow the tree to meet its genetic potential size.
Chesapeake Bay Preservation Ordinance	Minimum required height or caliper for a tree to be counted for Chesapeake Bay Preservation Ordinance tree canopy requirements
Chesapeake Bay Preservation Ordinance	Minimum required spread for a tree to be counted for Chesapeake Bay Preservation Ordinance tree canopy requirements
Chesapeake Bay Preservation Ordinance	Total coverage given to each species, according to the table below

Chesapeake Bay Pr	Native	Non-native	Spacing
Large	393.75	315	20
Medium-Large	312.5	250	20
Medium	218.75	175	15
Small-Medium	137.5	110	10
Small	62.5	50	10