

SUGGESTED URBAN STREET TREES IN NORTH CAROLINA

There are many lists and selection programs for helping choose the right tree for the right place. *The suggestions listed here do not provide a comprehensive list of all possible tree options and the lists are quite short compared to the actual number of trees within the 3 size ranges.* The trees in the 3 suggestion lists below are based on their ability to better tolerate the stress of growing in highly urban areas, with potentially smaller crown spread, presenting some options which may be more suitable for urban street situations. Where wider streets and/or sidewalks, or residential sites allow room for canopy spread, and there is sufficient root area, there are many other suitable species that can be considered.

When selecting the appropriate species: invasiveness, soil volume, site limitations, root spread, possible conflicts and maintenance regime, as well as nursery availability, must be considered, as does local overuse of a particular species and the environmental conditions (Coast, Piedmont and Mountains/ Plant Hardiness Zone). Remember that even tough trees cannot be expected to survive when neglected or unmanaged, or planted in planting pits. Investing in trees means investing in the size of the growing site, the soils in that growing site and the maintenance and care the trees receive. This will result in a long and significant return on your investment.

Pruning, watering, and other kinds of maintenance are necessary during the life of the tree for full value and impact.

Web Resources:

Hardiness Zone Tool - identify the hardiness zone of a location:

www.plantmaps.com/interactive-north-carolina-usda-plant-zone-hardiness-map.php

NCSU Extension Plant Toolbox - a plant selection tool: https://plants.ces.ncsu.edu/find_a_plant/

Tree fact sheets: http://hort.ifas.ufl.edu/database/trees/trees_scientific.shtml

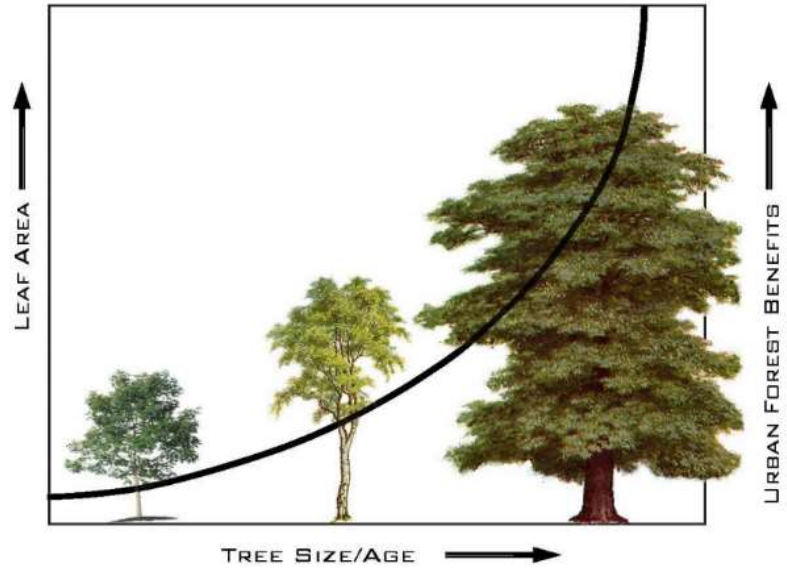
Invasive plants in NC: <http://nc-ipc.weebly.com/nc-invasive-plants.html>

Note for all lists that: 1) heights are typical for natural growing sites, trees in urban sites do not typically reach their full height, even when surviving to maturity; 2) growth rates are typical for natural growing sites, trees in urban sites may not grow as quickly, particularly when under chronic stress for soil volume and water.

TOPPING trees to limit height or to reduce conflicts is NOT acceptable, no matter how inexpensive a solution it may seem at the time. It damages the tree structure and opens it to decay, which ultimately reduces the life-span and the structural integrity of the tree. PLANT the RIGHT TREE in the RIGHT SPACE and maintain it with proper pruning and maintenance.

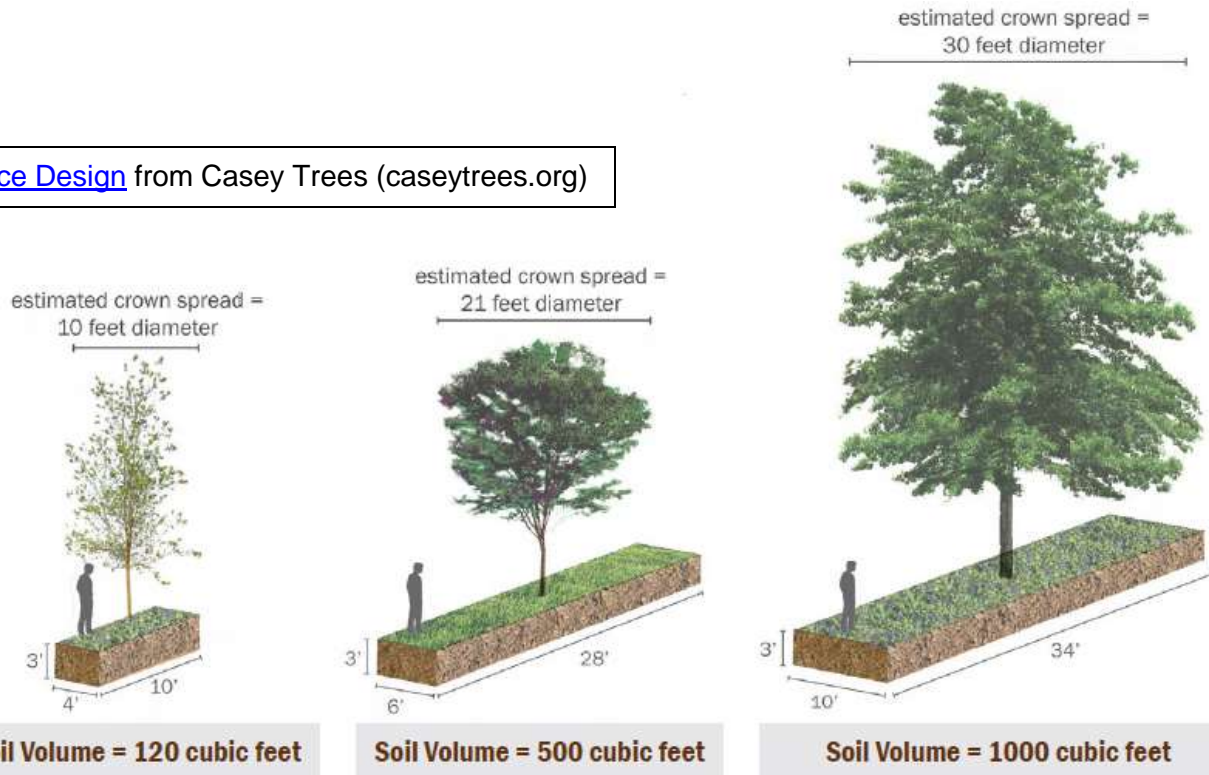
Many species have multiple cultivars, including narrow forms and/or shorter mature heights, be sure to choose the best one for your site.

NOTE: an additional column is included on this list to highlight specific concerns or questions when considering the suggested species for planting on the coastal plain where hotter and drier conditions exist. But watering is recommended for any street tree planted in NC.



[Designing with Trees in Mind](#) by
 Urban Forest Innovations
 (www.urbanforestinnovations.com)

[Tree Space Design](#) from Casey Trees (caseytrees.org)



SUGGESTED URBAN STREET TREES IN NORTH CAROLINA

LARGE[†] URBAN STREET TREES: Capable of a mature height greater than 50 feet tall, tree lawn width >= 10', soil volume >= 1500 sqft									
TREE SPECIES		SHAPE	GROWTH RATE			ENVIRONMENTAL TOLERANCE	PLUS	MINUS	Hardiness Zone Range
Scientific Name	Common Name		Slow	Med	Fast				
<i>Cercidiphyllum japonicum</i>	katsura tree	Various			●	Drought tolerant once established	Fine branch habit; fall color; no serious pests	Training prune when young	4B - 8
<i>Eucommia ulmoides</i>	hardy rubber tree	Rounded	●			Drought/ pH adaptable	Pest free; good summer foliage	Training prune when young	4B - 7
<i>Ginkgo biloba</i>	gingko	Various		●		Drought/ pH adaptable/ Compaction	Pest free; <i>narrow cultivars exist</i>	Training prune when young; male cultivars only	3 - 8A
<i>Gymnocladus dioicus</i>	Kentucky coffeetree	Various		●		Drought/ pH adaptable	<i>Narrow cultivars exist</i> ; no serious pests	seedless cultivars only; late leaf-out;	4B - 8
<i>Nyssa sylvatica</i>	black gum	Pyramidal		●		Drought/ Compaction	Red fall color	Leaf spot; needs good root mgt. in nursery	4b - 9
<i>Quercus coccinea</i> *	scarlet oak	Rounded		●		Moderate drought tolerance	Red fall color	Root and branch space; usual oak pest problems	5 - 8
<i>Quercus imbricaria</i> *	shingle oak	Rounded	●			Drought/ Compaction	Pyramidal when young	Spreading when mature; acorns to 1"	5 - 8A
<i>Quercus lyrata</i> *	overcup oak	Rounded		●		Drought / Compaction	<i>Highbeam cultivar</i> : fall color & narrower crown	Acorns to 1"	6 - 9A
<i>Quercus nuttalli</i> *	Nuttall oak	Rounded		●		Drought/ Compaction	Typically clean leaf drop, fall color	Training prune when young; acorns to 1"	6B - 8
<i>Quercus virginiana</i>	Southern live oak	Rounded		●		Drought	Shade, Native, Environmental benefits	Needs space & regular pruning	8A - 10
<i>Taxodium distichum</i>	baldcypress	Pyramidal		●		Drought/ Compaction/ wet soils	Fine branch habit; narrow cultivar exists	Large buttress roots; knees in wet sites	5 - 10
<i>Zelkova serrata</i>	Japanese zelkova	Rounded		●		Drought/ pH adaptable/ Compaction	Vase-shaped	Prune to address narrow branching; surface roots	5 - 8

†none of these trees should be planted in tree pits or other sites with limited root volume

*all oaks produce acorns but some species' acorns are smaller than others.

Other large tree species exist that are impressive trees but, due to spread, are not included on this list for urban street trees, however, they are beautiful and should be considered where space and management would avoid conflicts including, but not limited to: other oak species, London planetree, American elm cultivars, American basswood, American beech, dawn redwood, and the entire Hickory family.

Where space is available, large trees are the best choice. Proper management and training pruning will address most concerns while the trees provide long-term benefits aesthetically and environmentally. A discussion of the value and importance of large trees can be found in the [Large Tree Argument](#).

SUGGESTED URBAN STREET TREES IN NORTH CAROLINA

MEDIUM URBAN STREET TREES: Mature height between 30 feet and 50 feet tall, tree lawn width 5-10', soil volume 500-1500 sqft									
TREE SPECIES		SHAPE	GROWTH RATE			ENVIRONMENTAL TOLERANCE	PLUS	MINUS	Hardiness Zone Range
Scientific Name	Common Name		Slow	Med	Fast				
<i>Acer buergerianum</i>	trident maple	Oval		●		Drought/ Compaction	A non-red maple option; 30-40'	Low branching requires training prune when young	4B - 9
<i>Acer campestre</i>	hedge maple	Rounded	●			Drought/ high pH	A non-red maple option; 30-35'	Low branching requires training prune when young	5 - 8A
<i>Carpinus betulus</i>	European hornbeam	Pyramidal		●		Dry soils/ pH adaptable	Fine branching habit; narrow cultivars exist	Salt sensitive; 30-40'	4 - 7
<i>Celtis</i> 'Prairie Sentinel'	Prairie Sentinel® hackberry	Upright		●		Drought/ pH adaptable	Narrow upright form		4B - 9
<i>Corylus colurna</i>	Turkish filbert	Pyramidal		●		Drought/ pH adaptable	Fine branching habit; formal appearance	needs good nursery root mgt.; water 1 st couple years	5 - 7
<i>Ilex species:</i>	holly species:							Spiny, evergreen leaves	
<i>I. x attenuata</i>	East Palatka	Pyramidal		●		Drought/ pH adaptable/ salt	Typically, 1 spine at tip	Often sheared in nursery	7- 9
<i>I. x attenuata</i>	Savannah	Pyramidal		●			Large, bright fruit	Scale and other pests	6- 9
<i>I. opaca</i>	American	Pyramidal	●				Roots shallow but fine	Scale and other pests	5B - 9
<i>Koelreuteria paniculata</i>	goldenraintree	Rounded		●		Drought/ pH adaptable/ salt	Fine yellow flowers; interesting seed pods	Training prune when young; round seeds; 30-40'	5B - 9
<i>Ostrya virginiana</i>	American hophornbeam	Rounded		●		Drought/ pH adaptable	Shade tolerant; peeling bark; 30-40'	Salt sensitive; peeling bark	3 - 9
<i>Oxydendron arboreum</i>	Sourwood	Oval	●			Moderate drought tolerance	Native species; fall color	Finding a source at landscape size	5 - 9
<i>Pistacia chinensis</i>	Chinese pistache	Rounded		●		Drought/ pH adaptable	Fall color; pest free; 25-35'	Select male cultivars; fruit causes some litter	6B - 9
<i>Quercus x warei</i> 'Chimney Fire'	'Chimney Fire' oak	Narrow		●		hardy parent source	reddish tinge spring & red in fall; 10-15' wide	newer cultivar, finding a source	4 - 8

These lists can be expanded to include trees with a broader spread when trees are considered as an investment and their survival and site contributions are seen as a return on that investment, and are maintained as valuable green infrastructure.

Training pruning and proper pruning practices are recommended for all trees to maximize their contributions to the location and to reduce possible conflict with vehicles, pedestrians, buildings and other hardscape. Watering, especially during dry periods, reduces stress and improves appearance and survival. Mulch and/or soil protection reduces compaction which helps the roots and also promotes water infiltration.

SUGGESTED URBAN STREET TREES IN NORTH CAROLINA

SMALL URBAN STREET TREES: Mature height less than 30 feet tall (under utility wires) tree lawn width 3-5', soil volume 120-500 sqft									
TREE SPECIES		SHAPE	GROWTH RATE			ENVIRONMENTAL TOLERANCE	PLUS	MINUS	Hardiness Zone Range
Scientific Name	Common Name		Slow	Med	Fast				
Acer leucoderme	chalkbark maple	Oval	●			Drought/ high pH	A non-red maple option; 25-30'	Finding a source	5B - 8
Acer truncatum	Shantung maple	Rounded		●		Drought	Fall color; minor leaf scorch; 20-30'	Finding a source	4A - 8
Cercis canadensis var. texensis	'Oklahoma' redbud	Rounded		●		Local observation: drought/ heat	a tougher version of redbud; 15'-25'	spreading form; variable availability	6A - 8
Chionanthus retusus	Chinese fringetree	Oval	●			Some drought / pH adaptable	'Tokyo Towers' 15'-20' x10' wide; spring color		5B - 9
Cornus kousa	Kousa dogwood	Rounded		●		Moderate drought	Spring color; 15-20'	Dogwood anthracnose; fruit can cause litter	5 - 8
Crataegus laevigata	English hawthorn	Oval		●		Drought	Spring and fall color; 15-25'	Select cultivars without thorn; pests	4B - 8
Ilex x attenuata 'Fosteri'	Foster's holly	Pyramidal	●			Drought/ pH adaptable/ salt	No litter from persistent fruit; 15-25'	Spiny, evergreen leaves	6 - 9
Maackia amurensis	Amur maackia	Rounded	●			Extreme drought/ pH adaptable	Pest free; pinnate leaves for minor litter	Fruit pod may cause some litter	3 - 7
Prunus caroliniana	Carolina cherry/ laruel	Oval			●	Moderate drought/ pH adaptable	Shallow roots not a problem; 20-30'	Fruit can cause messy litter; heavy seedling production	8 - 10A
Sinojackia rehderiana	Jacktree			●		Drought	Spring and fall color; 15-20'	Finding a source in landscape sizes	6A - 10
Stewartia monadelphica	tall stewartia	Oval	●			Drought/ acidic	No pests; 25-30'	Finding a source	6B - 8
Styrax japonicus	Japanese snowbell	Rounded		●		Moderate drought	Nearly pest free; no significant fruit litter		6 - 8A
Syringa reticulata	Japanese tree lilac	Rounded		●		Moderate drought/ salt	Spring color; 20-25'	Some pests, irrigate in summer for resistance	4 - 7A

Small trees typically grow as wide as they do tall, which presents a challenge when using them as a street tree in downtown areas with sidewalks, parking, street overhang, and storefronts. While shorter height may be a desirable feature for business signs, spreading branches create long-term maintenance issues to reduce conflict with pedestrians and vehicles (parked or moving). In some cases, taller maturing trees, whose crowns can be eventually raised to make signage more visible, may be a better option. Narrow forms of a small tree species may be a better choice in such situations. Remember that small maturing trees tend to be shorter lived, even under ideal conditions, than large maturing trees.

Many small trees tend to be available as multi-stems but, for most street situations, a single stem (*tree form*) is recommended. Multi-stems can be suitable in other locations. **TRAINING PRUNING WHEN YOUNG** is strongly recommended for all small maturing trees in urban street locations.