



Trees to Plant under Power Lines

*Tom Simpson
Regional Urban Forester
Tennessee Dept. of Agriculture
Forestry Division*

*Wayne K. Clatterbuck
Associate Professor
Forestry, Wildlife & Fisheries*

Serious conflicts often develop between utilities and trees. Trees that grow into electric wires pose serious safety issues and often result in less reliable service. Utility companies spend more than \$1 billion annually for tree pruning, passing this cost on to the consumer. In addition, trees are often disfigured by improper pruning and killed or seriously injured by excavation for underground wires and pipes.

Understanding the growth habits of trees and planting the proper species for the location can reduce many of these problems. Any tree planting should include an assessment of space and height restrictions before planting. Underground utilities or building foundation limitations should also be assessed before the tree is placed in the ground. Trees may grow to their full potential and future utility and safety issues will be greatly reduced by selecting compatible trees and positioning them away from utilities. Existing tree/utility conflicts should be considered and the trees replaced where feasible.

Many local utilities already have a tree-replacement program for problem trees. Some utilities will plant the replacement trees, while others may issue nursery vouchers for homeowners to select their own replacement trees. Contact your local utility company to discover its method of replacement.

When selecting trees to plant under or near utility lines, consider the type of line.

Electric lines are commonly installed overhead and are often non-insulated. Service interruption results when branches contact the wires or when trees fall through the wires. No tree that exceeds 25 feet at maturity should be planted under these wires. In addition, trees that mature at greater heights should be spaced at least 25 feet horizontally from the closest wire. Telephone and cable TV lines are typically insulated and distribute much lower voltages but require the same level of planning as electric wires. Trees planted close to underground lines or water lines often cause major root system problems and are subject to serious injury when repairs to these lines are performed.

The following table lists suitable tree species for planting near power lines. Each utility may have different requirements for its system. Contact the company if you have any doubt as to its requirements.



Photo Credit: Wayne K. Clatterbuck

Figure 1. Pin oaks can grow greater than 70 feet in height and are a poor choice for planting under utility lines.



Photo Credit: Wayne K. Clatterbuck

Figure 2. Redbud mature at less than 25 feet and are recommended for planting under utility lines.

Recommendations

1. Assess area to be planted both above and below ground.
2. Select a tree of small stature that matures at a height less than 25 feet.
3. Consider existing utility and gas lines above and below ground.
4. Contact your utility about recommended species of trees to plant and tree planting programs.

References

Clatterbuck, Wayne K. 2000. Post-planting tree care: fallacies and recommendations. The University of Tennessee Agricultural Extension Service SP 574. Knoxville.

Dirr, Michael A. 1998. Manual of Woody Landscape Plants: Their identification, ornamental characteristics, culture, propagation and uses. 5th ed. Stipes Publishing Company, Champaign, IL.

Gerhold, Henry D., et al. 1993. Street Tree Factsheets. The Pennsylvania State University, School of Forestry Resources, University Park, PA.

Recommended Trees For Planting Under Utility Lines.

Botanical Name	Common Name	Height	Note
<i>Acer ginnala</i>	Amur maple	15-20 ft	Small tree native to China
<i>Acer palmatum</i>	Japanese maple	15-25 ft	Numerous varieties, colors, forms
<i>Acer tataricum</i>	Tatarian maple	15-20 ft	Bushy, spreading tree
<i>Amelanchier</i> spp.	Serviceberries	15-25 ft	Many varieties and hybrids; a few reach 30 ft
<i>Cercis canadensis</i>	Eastern redbud	20-25 ft	Showy flowers, varieties come in many colors
<i>Chionanthus virginicus</i>	White fringetree	12-20 ft	White, drooping flowers. Native
<i>Cornus florida</i>	Flowering dogwood	20-25 ft	White flowers, varieties come in different colors
<i>Cornus kousa</i>	Kousa dogwood	20-25 ft	White flowers, varieties come in different colors
<i>Cotinus coggygria</i>	Common smoketree	10-15 ft	Avoid the American smoketree, which grows to 30 feet
<i>Crataegus</i> spp.	Hawthorns	15-25 ft	Avoid Washington hawthorn, which grows to 35 feet
<i>Hamamelis</i> spp.	Witchhazel	15-20 ft	Many varieties & cultivars; common witchhazel grows to 30 feet
<i>Ilex x attenuata</i>	Foster holly	10-15 ft	An evergreen, used as a barrier in landscapes
<i>Koelreuteria paniculata</i>	Golden raintree	20-25 ft	Yellow flowers in late spring, can grow to 35 feet in some locations
<i>Lagerstroemia</i> spp.	Crape myrtle	15-25 ft	Many varieties & cultivars. Most grow under 25 feet in TN. Avoid the "tree" types
<i>Magnolia x soulangiana</i>	Saucer magnolia	20-30 ft	Grows smaller than 30 feet in TN. Many varieties, but bold flowers are susceptible to late freeze
<i>Magnolia stellata</i>	Star magnolia	10-20 ft	Delicate, white flowers. Attractive landscape tree
<i>Malus</i> sp.	Flowering crabapples	20-25 ft	Many ornamental varieties, all colors of flowers, small fruit that some consider messy. Good wildlife tree
<i>Syringa vulgaris</i>	Common lilac	10-20 ft	Small tree or large shrub

SP 611 - 12M - 7/03

R12-4910-034-004-04

The Agricultural Extension Service offers its programs to all eligible persons regardless of race, religion, color, national origin, sex, age, disability or veteran status and is an Equal Opportunity Employer. COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

The University of Tennessee Institute of Agriculture, U.S. Department of Agriculture, and county governments cooperating in furtherance of Acts of May 8 and June 30, 1914.

Agricultural Extension Service

Charles L. Norman, Dean

Printing for this publication was funded by the USDA Forest Service through a grant with the Tennessee Department of Agriculture, Division of Forestry. The Trees for Tennessee Landscapes series is sponsored by the Tennessee Urban Forestry Council.

