FACT SHEET 7

Pennsylvania Urban and Community Forestry

Questions about Trees and Utilities

Q Why is the utility company "butchering" our trees?

- Pruning trees along overhead utility lines reduces electrical interruptions, provides safe conditions for the public, and protects power company employees. Most interruptions during storms are caused by trees. One type of service interruption, called a momentary interruption, is annoying to the customer because it lasts just long enough to affect sensitive electronic equipment such as clocks, VCRs, and computers. A second type, called a sustained interruption, results in a complete loss of power. Sustained outages occur mainly during severe weather, and may cause serious damage to electric facilities.

- The utility company hires contractors whose trained tree workers clear vegetation back to distances that are consistent with safe and reliable electric service. Clearances between trees and wires vary according to different voltages of primary and secondary conductors. Also, pruning practices may differ between urban and rural areas. Most utilities use an arboriculturally correct method called directional pruning, instead of topping and shearing. Directional pruning directs subsequent growth away from wires and leaves no stubs. Even a properly pruned tree growing near wires may have a disfigured appearance.

Q Can't wires be buried underground, to get them out of our trees?

- In new developments, electrical conductors usually are placed underground. But to relocate existing wires from poles to an underground installation would be prohibitively expensive. Besides the expense to the utility company, property owners would have to dig up their yards and relocate the electrical entrance to each building at a cost of several thousand dollars. Moreover, the trenching would tear up tree roots, which could injure or kill the trees. Future maintenance of underground utilities can be disruptive to established landscape plants, and repairs would result in longer outages.

Q How can the conflict between trees and wires be resolved?

- The best long-range solution is to replace incompatible trees (those that interfere with wires) with new trees that will not grow into wires. Trees can be replaced all at once, or one at a time as trees become overmature and unhealthy. The choice between sudden or gradual replacement depends on various considerations, including the type of landscape desired in a neighborhood. A formal design with uniformly spaced trees of the same kind and size requires planting all trees at the same time. An informal planting design can be implemented over several years, with less disruption in the appearance of the neighborhood.

- The design concept of trees that are compatible with utility lines has been called "the right tree in the right place." The right tree for planting under utility wires is a species that will not be taller than 20 to 30 feet at maturity (Table 1). Medium-size trees, up to 45 feet at maturity (Table 2), can be planted near utility lines if they are offset at least 15 feet from the nearest wire. Adequate space for root growth

PHOTO COURTESY OF GEOFF KEMPTER, ASPLUNDH TREE EXPERT CO.

Trees under these wires were topped improperly several years ago. Vigorous regrowth of slender branches from the stubs of thicker branches grew into the wires, requiring pruning for clearance.

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After directional pruning of the same trees, branches directed away from the wires were retained instead of being removed, as they previously were. Much of the regrowth will now occur on those retained branches, without interfering with the wires. Although the shape of the trees appears unnatural in the winter, they will be more normal in appearance when covered with foliage and will be healthier throughout the year.

also is an important consideration when deciding tree size and placement. Low-growing trees are most appropriate if the space for roots between the curb and the sidewalk is less than 4 feet wide. If pedestrians and vehicles pass by the planting site, the variety selected should have ascending branches and a single trunk that can be pruned up for clearance.

Q Can't we have any large trees?

■ Yes, many residential neighborhoods and other locations can and should accommodate properly placed large trees. Utility lines usually are along just one side of a street; large trees can grow on the opposite side if there is ample space for the roots and branches. Other open spaces away from the street also can accommodate large trees, though they should be planted far enough away from buildings. In fact, a diverse mixture of tree sizes and species tends to be healthier, with fewer disease or insect problems. Large trees are recommended where space permits, as they contribute most to cleaner air, moderating temperatures, and reducing storm water runoff.

Q Who can answer my other questions?

■ Contact your local utility, Penn State Cooperative Extension office, or Pennsylvania District Forestry office.

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Table 1. Low-growing trees compatible under utility wires; mature sizes in urban situations.

COMMON NAME	SCIENTIFIC NAME	MATURE HEIGHT AND WIDTH	
choke cherry, Shubert	Prunus virginiana Shubert	20–30	15–20
crabapple varieties:	Malus varieties:	16–30	8–30
Adams, Centurion, Harvest Gold, Madonna, Prairifire, Prof. Sprenger, Red Barron, Red Jewel, Sentinel, Snowdrift, Spring Snow, Sugar Tyme, Zumi, or Redbud		depends on variety	
dogwood, kousa, and hybrids:	Cornus kousa and varieties:	20–30	20–30
Celestial, Constellation, Julian, Milky Way, Stardust, Steeple, Stellar Pink			
hawthorn varieties:	Crataegus varieties:	15–30	12–35
Crimson Cloud, inermis, Ohio Pioneer, phaenopyrum, Vaughn, Winter King		depends on variety	
Japanese tree lilac varieties:	Syringa reticulata varieties:		
Ivory Silk, Regent, Summer Snow		20–30	15–25
magnolia, Galaxy	Magnolia Galaxy	20–30	10–15
magnolia, Star	Magnolia stellata	10–20	10–15
maple, Amur	Acer ginnala	15–20	15–20
maple, paperbark	Acer griseum	25–35	15–20
maple, Tatarian	Acer tataricum	15–25	15–25
maple, trident	Acer buergeranum	20–30	20–30
serviceberry varieties:	Amelanchier varieties:	20–30	12–20
Autumn Brilliance, Cumulus, Majestic, Princess Diana, Robin Hill, Tradition		depends on variety	

Table 2. Medium-size trees compatible near utility wires, offset at least 15 feet; mature sizes in urban situations.

COMMON NAME	SCIENTIFIC NAME	MATURE HEIGHT AND WIDTH	
birch, Heritage	Betula nigra Heritage	40–50	30–40
cherry varieties:	Prunus varieties:	25–40	12–35
Accolade, Kwanzan, Okame, Rosy Cloud, Sargent columnar		depends on variety	
corktree, Amur, varieties:	Phellodendron amurense varieties:	35–45	30–40
Macho, Shademaster			
goldenrain tree	Koelreuteria paniculata	25–40	25–40
honeylocust, Imperial	Gleditsia triacanthos Imperial	30–40	35–45
hophornbeam, American	Ostrya virginiana	30–40	20–30
hornbeam, American	Carpinus caroliniana	20–35	20–35
hornbeam, fastigiate	Carpinus betulus fastigiata	40–50	30–40
horsechestnut, red	Aesculus x carnea	35–50	30–45
magnolia, Merrill	Magnolia Merrill	25–40	25–40
maple, Crimson King	Acer platanoides Crimson King	40–50	35–45
maple, Olmsted	Acer platanoides Olmsted	35–45	20–25
maple, Norwegian Sunset	Acer truncatum Norwegian Sunset	35–45	25–35
maple, Pacific Sunset	Acer truncatum Pacific Sunset	30–40	25–35
maple, Queen Elizabeth	Acer campestre Queen Elizabeth	30–40	25–35
pagoda tree varieties	Sophora japonica varieties:	40–50	25–40
Halka, Regent, Princeton Upright			
pear, callery, varieties	Pyrus calleryana varieties:	35–45	12–35
Aristocrat, Autumn Blaze, Capital, Chanticleer, Cleveland Pride, Cleveland Select, Valiant, Whitehouse		depends on variety	
yellowwood	Cladrastis kentukea	35–50	40–55

This fact sheet was prepared by Penn State with guidance from the Pennsylvania Urban and Community Forestry Council and support from the Pennsylvania DCNR Bureau of Forestry. For more information, contact the Pennsylvania Urban and Community Forestry Program, School of Forest Resources, The Pennsylvania State University, 108 Ferguson, University Park, PA 16802; (814) 863-7941.

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