



TREE CITY USA BULLETIN

for the
Friends of Tree City USA

Bulletin No. **8**
James R. Fazio, Editor

Don't Top Trees!

Tree topping is the senseless brutalizing of older trees. It brings about the uglification of America's urban forest, striking some communities like a plague.

Seeing trees that have been permanently desecrated by topping both angers and saddens me. I'm angered because it is so senseless and so destructive. I'm saddened because I know that people have spent good money to perform this mutilation, often with the best of intentions.

It's not that people who pay for trees to be topped aren't good people. They're just uninformed about the consequences of topping and about the better alternatives that are available to them.

Nationally, neither individuals nor communities are spending enough money on tree care. It just makes no sense to use the money that is being spent on a practice as detrimental as topping.

Jim Fazio has skillfully described the reasons you should not top trees, and the available alternatives, in this very important Bulletin edition.

I hope you will be relieved of the slightest temptation to top trees on your property, and that you will lend strong support to ending the topping of trees in your community.

John Rosenow
Executive Director
National Arbor Day Foundation



What Is Topping?

The sight of topped trees is all too common in the communities and along the roadways of America — trunks with stubby limbs standing naked in the landscape, trees stripped of all dignity and grace. To one who loves trees, the sight usually evokes anger and disgust.

As more is learned about the long-term effects of tree topping, the more senseless this practice becomes. It is more than an assault on beauty, it is unnecessary stress and increased risk to the tree's health. It is also a self-defeating exercise usually not worth the expense, and the results pose a danger from rot and weakly attached re-growth. In short, as one arborist said, "Topping is the absolute worst thing you can do for the health of your tree."

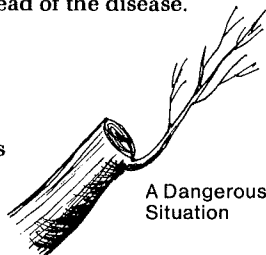
Trees are often topped because they grow into utility wires, interfere with views or solar collectors, or simply grow so large that they worry the landowner. Some people — having seen trees topped in a park or other public place under the care of an "expert" — top their trees because of a mistaken impression that the practice is good for trees, especially because of the obvious flush of new growth that follows. Topping is also a result of irreputable "tree experts" knocking on doors and convincing the homeowner that for safety reasons, the job should be done. Their services are then offered — quick 'n cheap.

David Raak, University of Idaho



Why NOT To "Top"—Eight Good Reasons

- 1 Starvation:** Good pruning practices rarely remove more than $\frac{1}{4}$ to $\frac{1}{3}$ of the crown, which in turn does not seriously interfere with the ability of a tree's leafy crown to manufacture food. Topping removes so much of the crown that it upsets an older tree's well-developed crown-to-root ratio and temporarily cuts off its food-making ability.
- 2 Shock:** A tree's crown is like an umbrella that shields much of the tree from the direct rays of the sun. By suddenly removing this protection, the remaining bark tissue is so exposed that scalding may result. There may also be a dramatic effect on neighboring trees and shrubs. If these thrive in shade and the shade is removed, poor health or death may result.
- 3 Insects and Disease:** The large stubs of a topped tree have a difficult time forming callus. The terminal location of these cuts, as well as their large diameter, prevent the tree's chemically based natural defense system from doing its job. The stubs are highly vulnerable to insect invasion and the spores of decay fungi. If decay is already present in the limb, opening the limb will speed the spread of the disease.
- 4 Weak Limbs:** At best, the wood of a new limb that sprouts after a larger limb is truncated is more weakly attached than a limb that develops more normally. If rot exists or develops at the severed end of the limb, the weight of the sprout makes a bad situation even worse.
- 5 Rapid New Growth:** The goal of topping is usually to control the height and spread of a tree. Actually, it has just the opposite effect. The resulting sprouts (often called *water sprouts*) are far more numerous than normal new growth and they elongate so rapidly that the tree returns to its original height in a very short time — and with a far denser crown.
- 6 Tree Death:** Some older trees are more tolerant to topping than others. Beeches, for example, do not sprout readily after severe pruning and the reduced foliage most surely will lead to death of the tree.
- 7 Ugliness:** A topped tree is a disfigured tree. Even with its regrowth it never regains the grace and character of its species. The landscape and the community are robbed of a valuable asset.
- 8 Cost:** To a worker with a saw, topping a tree is much easier than applying the skill and judgement of good pruning. Therefore, topping may cost less in the short run. However, the true costs of topping are hidden. These include: reduced property value, the expense of removal and replacement if the tree dies, the loss of other trees and shrubs if they succumb to changed light conditions, the risk of liability from weakened branches, and increased future maintenance.



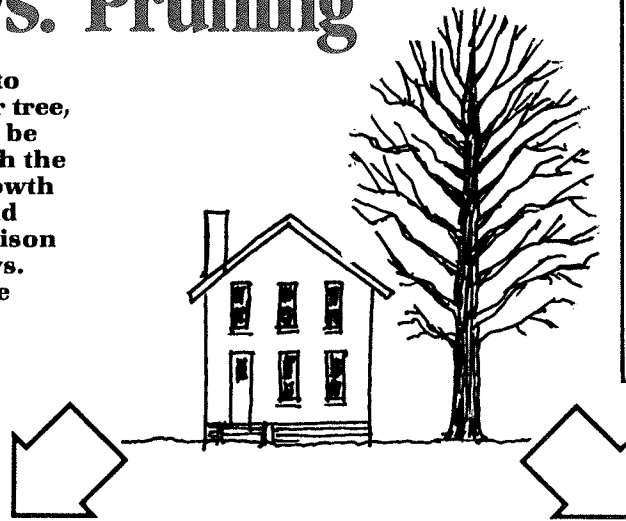
Topping vs. Pruning

When a decision is made to reduce the size of an older tree, it can be topped, or it can be pruned properly. Although the speed and nature of regrowth will depend on species and local factors, any comparison of irresponsible topping vs. competent pruning will be dramatic.

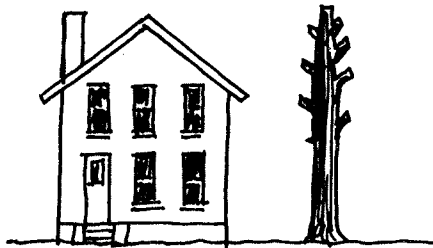
Topping by Any Other Name is Just as Ugly

Sometimes pseudo tree experts use different terms for the malpractice of topping. Here is a rogues' gallery of synonyms:

- Stubbing
- Heading
- Heading-back
- Stubbing-off
- Hatracking
- Topping-off
- Dehorning
- Lopping



Topping



Year 1

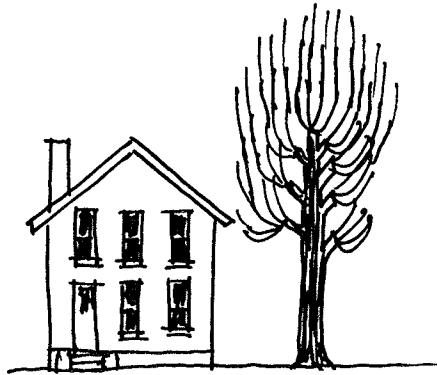
The topped tree is an ugly stub and a remnant of a once lovely tree. If pruned properly, size is reduced but form and beauty are retained.

Pruning



Year 3

Vigorous sprouts have sprung out of the topped tree in large numbers and are growing with abnormal rapidity. The pruned tree adds growth more slowly and more normally distributed.



Year 6

In a relatively short time, the topped tree is as tall – and far bushier and more dangerous – than it was to begin with. The properly pruned tree is safer, more beautiful, and its size better controlled.



Alternatives To Topping

There are times when the size and shape of a shade tree need to be controlled. With care and skill, this can be accomplished without marring the tree's beauty or usefulness. Responsible pruning even contributes to the health and safety of a tree.

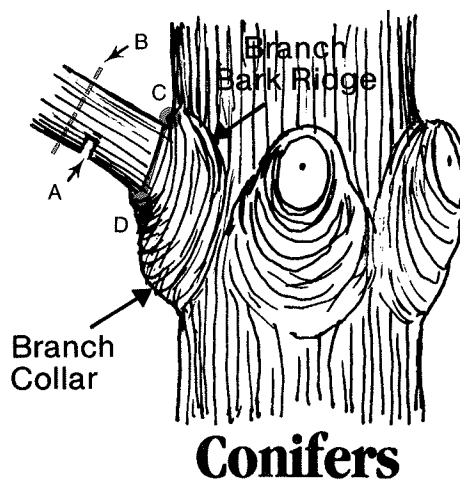
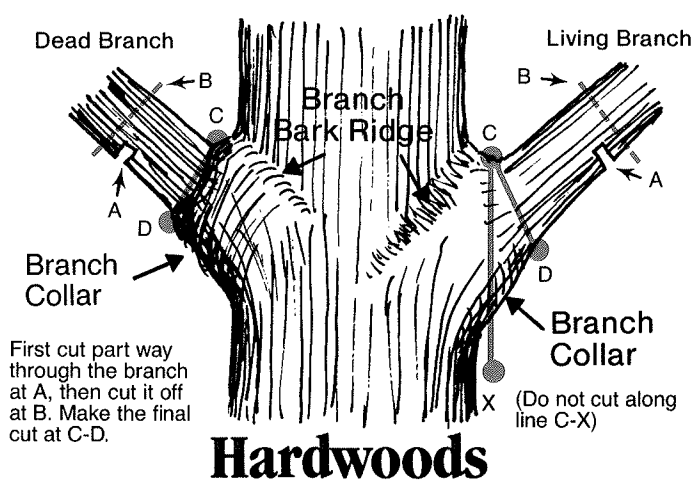
As alternatives to topping, some general principles are:

- ☑ Start out right by planting trees that will fit your available space *when they reach maturity*. See *Tree City USA Bulletin No. 4*, "The Right Tree for the Right Place."
- ☑ Begin proper pruning early in the life of a tree. See *Tree City USA Bulletin No. 1*, "How to Prune Young Shade Trees."
- ☑ To slow growth of a tree, avoid the use of nitrogen fertilizer.
- ☑ Prune properly and regularly. A light pruning every three years will keep your tree in healthy condition. It will also have less drastic effects on both the landscape and your financial assets compared with neglecting older trees or resorting to topping.



Mike Kuhns, University of Nebraska

Proper Pruning Principles



Thanks largely to the work of Dr. Alex L. Shigo and other scientists at the USDA Forest Service's Northeastern Forest Experiment Station in Durham, NH, much is now understood about a tree's natural system of defense against infections from wounds. Based on this knowledge, these methods of making pruning cuts are recommended to help

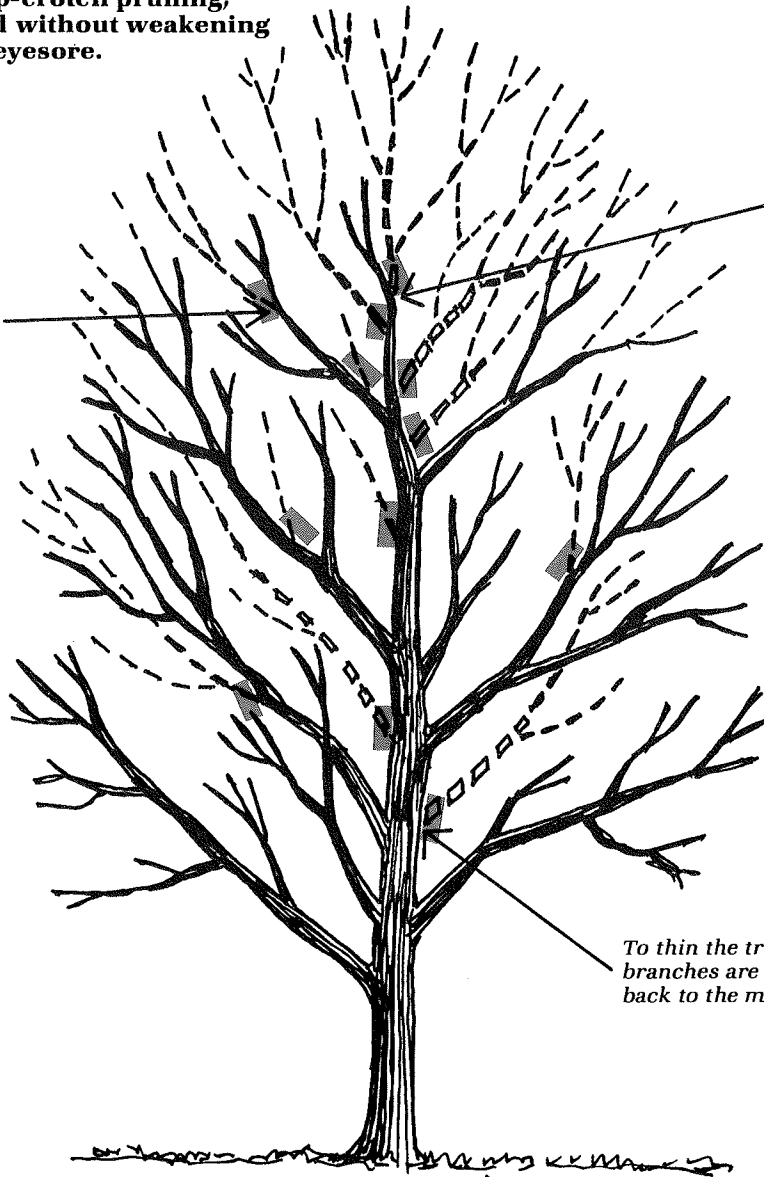
work with rather than against a tree's natural tendency to wall off injured tissues and prevent the spread of decay. In these illustrations, final cuts should be made from points C to D. Do not cut along line C-X, which is simply an imaginary vertical line to help you locate C-D.

Reducing the Height of a Large Tree

Through the use of drop-crotch pruning, tree size can be reduced without weakening the tree or creating an eyesore.

Perimeter limbs are pruned where they join large-diameter side branches.

The tallest branches are cut back to a large-diameter secondary branch so that a leader remains.



To thin the tree, some branches are cut off back to the main trunk.

Arborists have different terms for pruning operations, usually based on the purpose for pruning and diameter of the limbs to be cut. These go by such names as safety prune, crown lifting (removal of lower limbs), medium prune, and many others. A good reference on the technicalities of pruning is Richard W. Harris' *Arboriculture* (Prentice-Hall, Inc., Englewood Cliffs, NJ 07632).

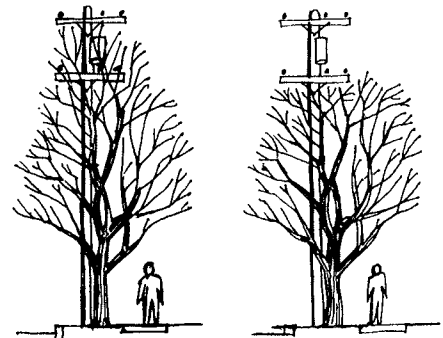
As an alternative to topping, the technique of most importance is one called *drop-crotching*. The results can be most amazing. When done correctly, drop-crotching is like a good haircut – virtually unnoticeable.

Drop-crotching is a method that combines thinning out the crown of a tree and reducing its height and spread. But rather than the ends of branches simply being lopped off, limbs forming the perimeter of the tree are pruned at their junction with shorter, large-diameter side branches. In this way, a leader always remains. In turn, the presence of a leader prevents or reduces latent buds from sprouting into the bushy growth that results from lopping off branch ends. For even more assurance

against sprouting, large cuts can be treated with naphthaleneacetic acid (NAA), but this should be applied only by or with the advice of an arborist.

With care, drop-crotching can reduce tree size while at the same time retaining the species' natural form. It can also often be accomplished without cutting limbs larger than six inches in diameter.

An example of drop-crotch pruning to control tree growth beneath utility lines.



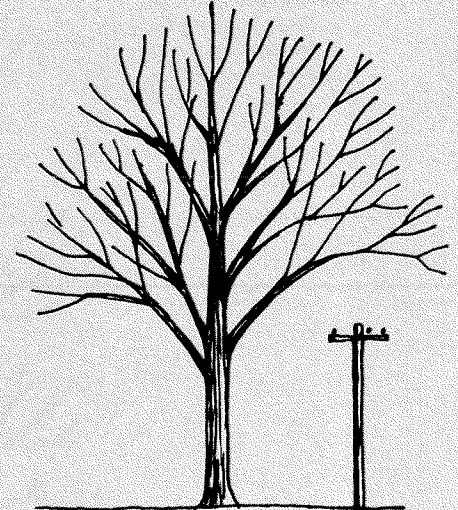
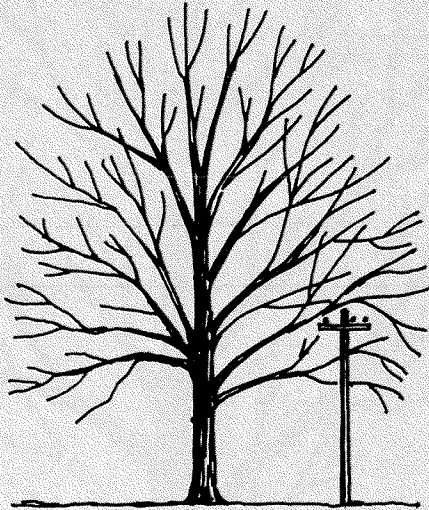
Drop Crotching

How an Urban Forestry Program

An active community forestry program can be the strongest line of defense against the defacement of trees by topping.

Working with Utility Companies

A major challenge of urban forestry is working with utility companies to help keep overhead wires safe from tree damage while at the same time assuring that street trees are not mutilated by topping. Fortunately, this problem is diminishing as increasing numbers of companies assign tree trimming to trained arborists, many of whom are members of professional groups such as the Utility Arborist Association. Workers who are not members should be encouraged to join and can do so by contacting the executive director, c/o Metropolitan Edison, PO Box 542, Reading, PA 19640.

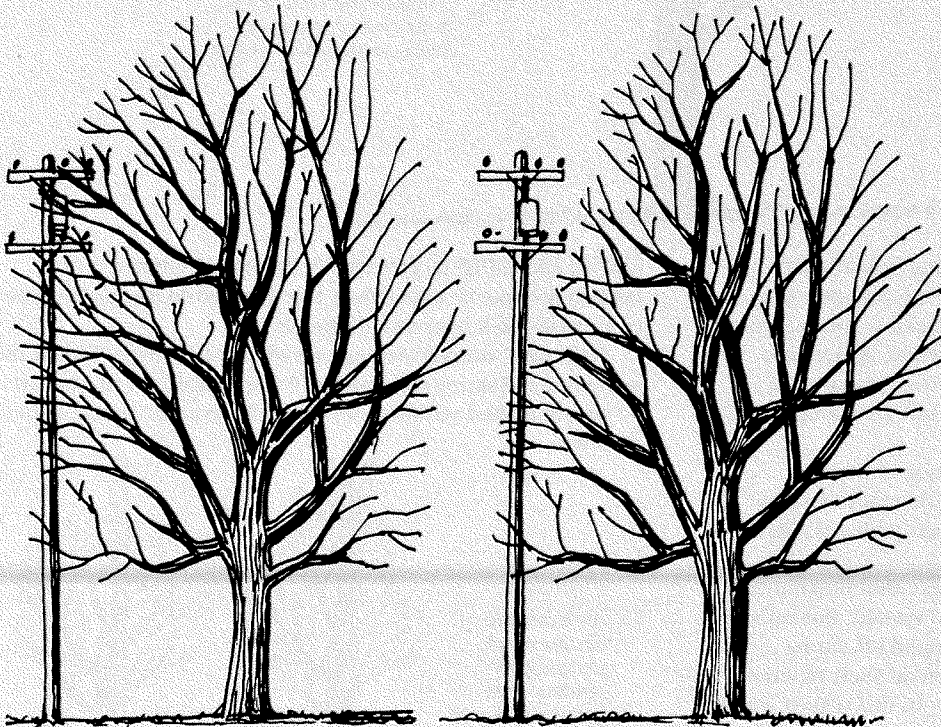


Under Pruning

In utility line maintenance, modifications of drop-crotch pruning can be used as an alternative to topping or making a tree lop-sided to keep it away from wires.

Under pruning is a technique to remove limbs of a large street tree to allow wires to pass below the trees. To preserve the tree's symmetry, lower limbs on the opposite side of the tree should also be removed. Additional crown thinning will help keep the tree healthy and less likely to drop limbs during a storm.

Side pruning is often needed when a tree is located close beside transmission lines. As the limbs extend toward a pole or the wires, careful pruning can be used to avoid a lopsided tree or unsightly notch in the crown. Using the drop-crotch technique of cutting at lower limb junctions, troublesome branches can be removed without hedge-like truncations. Limbs above and below the problem spots, and some on the opposite side of the tree, can also be shortened to retain balance.

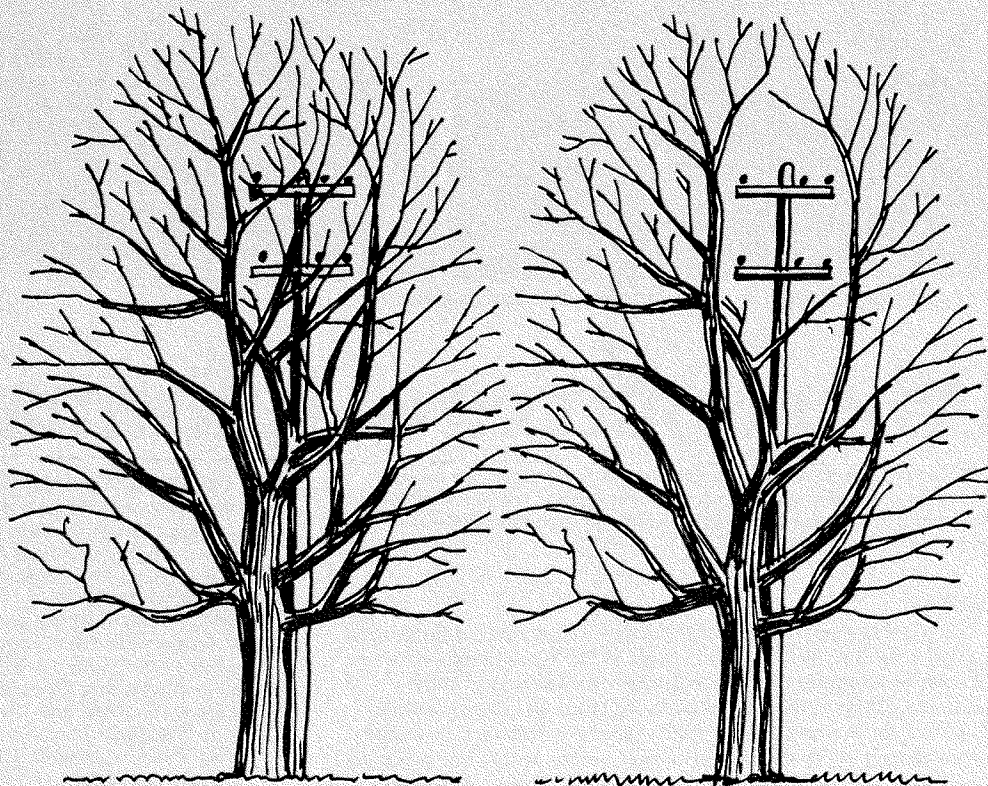


Side Pruning

Can Put an End to Topping

Through pruning, sometimes referred to as creating a *doughnut hole*, is an alternative to topping when trees that have been planted beneath wires grow too large. This method is especially useful around secondary lines or those leading into individual houses or buildings. With care and the use of drop-crotch principles, inner limbs can be removed without creating a highly noticeable tunnel appearance.

At times, due to prior topping or extremely bad placement under wires, it is best to remove a tree and replace it with a more suitable tree. (See Bulletin No. 4.)



Through Pruning

Education

Once again, education plays the most important role in promoting good tree care practice. In the case of reducing crown size, the need is not only to help individuals who do their own work, but more importantly, to reach the larger number who are likely to use the services of a tree expert. Alerting citizens to the foolishness of most tree topping and helping them recognize and select a professional arborist go hand in hand. We suggest the use of this bulletin together with Bulletin No. 6, "How to Hire an Arborist."

Ordinances

When education and voluntary action fail to stop tree topping, some communities decide to take the most serious form of action. In this case, tree topping is outright prohibited or closely controlled through the use of a municipal ordinance. Usually this is part of a broader tree ordinance, the subject of a future issue of *Tree City USA Bulletin*.

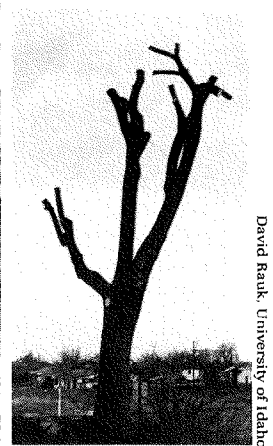
Here is an example of an applicable section taken from a model ordinance developed by Kansas State University's Forestry Extension:

SECTION XIII

Tree Topping

It shall be unlawful as a normal practice for any person, firm, or city department to top any street tree, park tree, or other tree on public property. Topping is defined as the severe cutting back of limbs to stubs larger than three inches in diameter within the tree's crown to such a degree so as to remove the normal canopy and disfigure the tree. Trees severely damaged by storms or other causes, or certain trees under utility wires or other obstructions where other pruning practices are impractical may be exempted from this ordinance at the determination of the City Tree Board.





Tree topping is mutilation. The practice should be stopped.

Other Sources of Information

Tree City USA Bulletin will inform readers of helpful, up-to-date publications which provide more depth or that are readily available for community distribution. The editor welcomes sample copies to consider for inclusion in future editions.

Books

Two books provide especially helpful and up-to-date guides to good pruning. Both are the result of Dr. Alex Shigo's three decades of studying tree response to wounding and other problems. Written in understandable language, these unique books are for anyone who actually works with trees, or as the author puts it – for the person who *touches* trees. For price and purchasing information, contact: Shigo and Trees, Associates, 4 Denbow Road, Durham, NH 03824.

A New Tree Biology – Facts, Photos and Philosophies on Trees and Their Problems and Care (595 pp.)

Tree Pruning – A Worldwide Photo Guide (192 pp.)

Learning Program

An educational program has been developed by information specialists at the experiment station where Alex Shigo and his colleagues did much of their pioneering work on the effects of pruning and other tree wounds. A speaker is available for conferences and workshops, and has a variety of visual aids that include audio-visuials, posters, unique 3-D models, wood samples and publications. Contact: H. Sharon Ossenbruggen, Forestry Sciences Laboratory, USDA Forest Service, PO Box 640, Durham, NH 03824

Slide Sets and Videotapes

Numerous audio-visuials are now available to help with training sessions and self-education programs about pruning. These include:

TLC for City Trees, an 80-slide set with tape and printed script, for sale from Audio Visual Communications, 453 Crooked Lane, King of Prussia, PA 19046.

CODIT: Patterns of Life, an 80-slide set with tape and printed script depicting compartmentalization of decay in trees, for sale from Cornell Communications Company, 32 S. Lansdowne Ave., Lansdowne, PA 19050.

Proper Tree Care (5 different topics, including pruning), available for sale in any specified videotape format. Contact: Department of Media Services, Diamond Library, University of New Hampshire, Durham, NH 03824.

Proper Tree Pruning, a 20-minute video in 1/2" VHS format. Not available for loan or sale, but copies will be provided as a public service if you send a blank video-cassette and self-addressed mailing label to: Alabama Forestry Commission, 513 Madison Ave., Montgomery, AL 36130.

Pruning Your Own Shrubs and Small Trees, 50 minutes of illustrated information and demonstrations available for sale or rental in a variety of videotape formats from Ag Communications Center, University of Idaho, Moscow, ID 83843.

To order additional Bulletin copies... Friends of Tree City USA members may obtain a single copy of any Tree City USA Bulletin free of cost. Quantities of any issue are available at 25 for \$6.25 or 500 for \$100. To order; specify the issue number and quantity, and make your check payable to: The National Arbor Day Foundation, 100 Arbor Avenue, Nebraska City, NE 68410

The Bulletins available are:

- No. 1 *How to Prune Young Shade Trees*
- No. 2 *When a Storm Strikes*
- No. 3 *Resolving Tree-Sidewalk Conflicts*
- No. 4 *The Right Tree for the Right Place*
- No. 5 *Living with Urban Soils*
- No. 6 *How to Hire an Arborist*
- No. 7 *How to Save Trees During Construction*
- No. 8 *Don't Top Trees!*

To Join the Friends of Tree City USA...to receive a subscription to the Tree City USA Bulletin...and to become more involved in the urban forestry movement in your town and throughout America, send a \$10 dues-donation to Friends of Tree City USA, National Arbor Day Foundation, 100 Arbor Avenue, Nebraska City, NE 68410. Make your check payable to National Arbor Day Foundation.

Tree City USA Bulletin © 1989 National Arbor Day Foundation. John E. Rosenow, publisher; James R. Fazio, editor; Gerreld L. Pulsipher, graphic design; Gene W. Grey, William P. Kruidenier, James J. Nighswonger, technical review committee. Although copyright is vested with the Foundation, permission is hereby granted for the contents of this bulletin to be reproduced for non-commercial educational or public-service purposes provided the source is acknowledged.



TREE CITY USA

The Tree City USA program is sponsored by The National Arbor Day Foundation in cooperation with the U.S. Forest Service and National Association of State Foresters. To achieve the national recognition of being named as a Tree City USA, a town or city must meet four standards:

Standard 1: A Tree Board or Department

Standard 2: A City Tree Ordinance

Standard 3: An Annual Community Forestry Program

Standard 4: An Arbor Day Observance and Proclamation

Each winning community receives a Tree City USA flag, plaque, and community entrance signs. Towns and cities of every size can qualify. Tree City USA application forms are available from your state forester or The National Arbor Day Foundation.

Published for the
Friends of Tree City USA
by

The National Arbor Day Foundation
100 Arbor Avenue • Nebraska City, NE 68410