



Don't Top Trees!

TREE CITY USA®
BULLETIN

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Tree topping is the senseless brutalizing of older trees. It puts an ugly scar on the landscape, sometimes in parks or along streets, but more often in yards and around business establishments. It remains a plague across America, although not as rampant as it used to be. Still, especially in smaller communities, the results of topping can be seen more than 100 years after its detrimental effects were recognized by pioneer arborist John Davey.

Not only is topping bad for the tree, it is a waste of money. Research has found that most people top trees because of fear that the tree is becoming too large. By this, these well-intentioned folks mean that they fear

for their safety or their buildings. But in most cases, topping just contributes to greater danger from the resulting proliferation of weakly attached sprouts and the entrance of decay fungi.

Nationally, neither communities nor individuals are spending enough money on tree care. It makes no sense, then, to use these limited funds on the malpractice of topping. In this bulletin, we provide more details about the reasons why trees should not be topped. Just as importantly, we offer available alternatives.

Through better information, perhaps the scourge of topped trees can finally be eliminated.



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

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 and cheap.

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



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.



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 distributes it more normally.

PRUNING



WHY NOT TO TOP — EIGHT GOOD REASONS

1 Starvation: Good pruning practices rarely remove more than a quarter of the crown, which 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 closing the pruning wound. The terminal location of these cuts, as well as their large diameter, prevents 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.

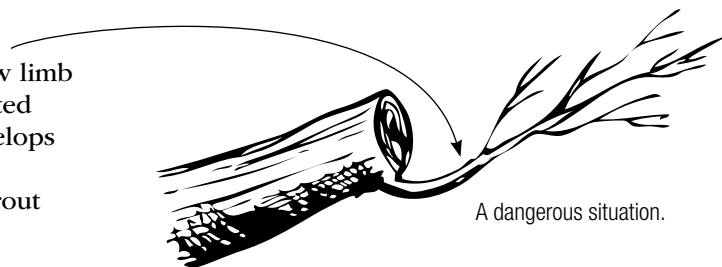
5 Rapid New Growth: The goal of topping is usually to control the height and spread of a tree. Actually, it has just the opposite effect. The resulting sprouts (often called water sprouts)

are far more numerous than normal new growth and elongate so rapidly that the tree returns to its original height in a very short time — and with a far more dense and dangerous crown.

6 Tree Death: Some species of trees are less tolerant to topping than others. Beeches, for example, do not sprout readily after severe pruning; the reduced foliage often leads to the 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 judgment needed for 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.



YEAR 6

In a relatively short time, the topped tree is as tall as — 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.



TOPPING BY ANY OTHER NAME IS JUST AS UGLY

Sometimes pseudo tree experts use different terms for the malpractice of topping. Here are some commonly used synonyms:

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

Alternatives to Topping



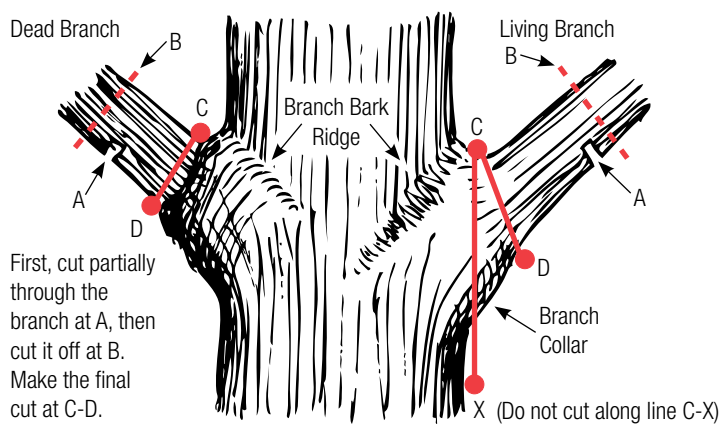
Careful planning at planting time is the best way to reduce the need later to control size or shape of a tree. Placing utilities underground and planting the right species in the right place will allow trees to retain their natural form and beautify landscapes along streets and in parking lots.

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 the 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.

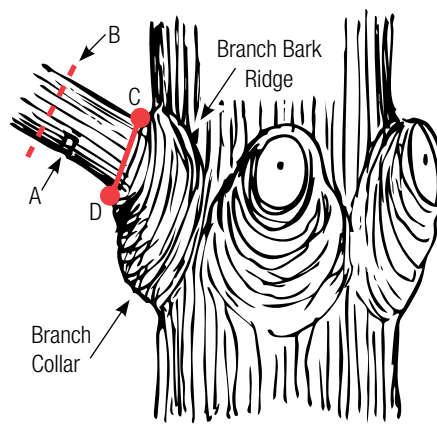
PROPER PRUNING PRINCIPLES



HARDWOODS

Thanks largely to the work of the late Dr. Alex L. Shigo and other scientists at the U.S. Forest Service's Northeastern Forest Experiment Station in Durham, New Hampshire, 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



CONIFERS

and prevent the spread of decay. In these illustrations, final cuts should be made from points C to D. Do *not* cut along the C-X line, which is simply an imaginary vertical line to help you locate C-D.

Reducing the Height of a Large Tree

*There are sometimes legitimate reasons to reduce the size of a large tree. This can usually be accomplished through a pruning objective called **crown reduction** rather than by topping.*

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

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

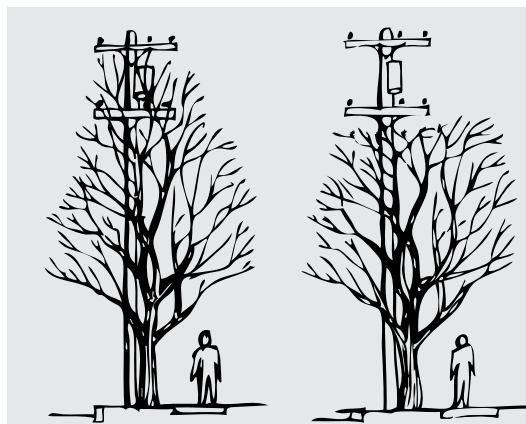
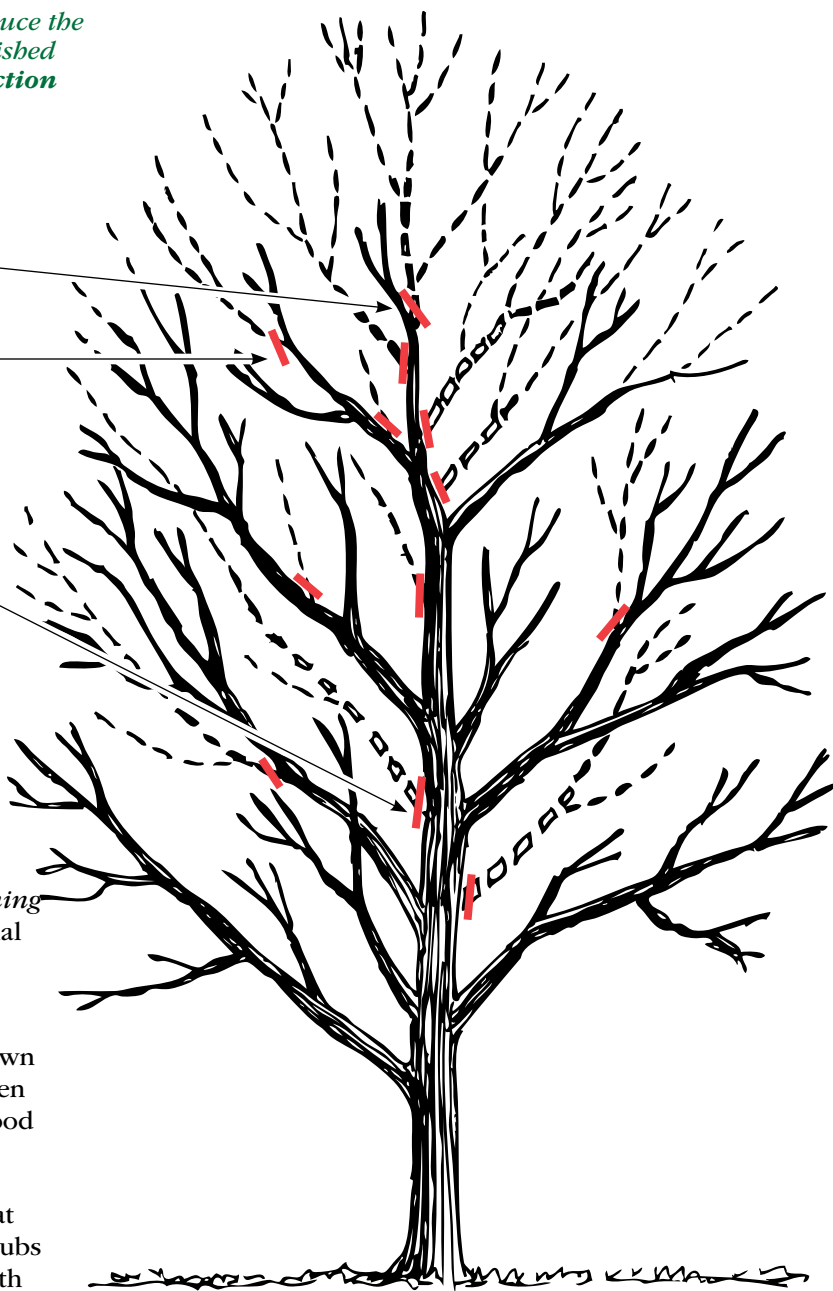
Some branches may be cut back to the main trunk.

Arborists have different terms for pruning operations, usually based on the objective for pruning and diameter of the limbs to be cut. These go by such names as crown raising (removal of lower limbs), crown cleaning, and others. A good reference on the technicalities of pruning is Richard W. Harris' *Arboriculture*. For standardized definitions, refer to the *Glossary of Arboriculture Terms and Tree, Shrub and Other Woody Plant Maintenance — Standard Practice* (ANSI A300) from the Tree Care Industry Association or *Pruning Best Management Practices* from the International Society of Arboriculture.

An alternative to topping is using a natural system of pruning to achieve an objective of crown reduction. The results can be most amazing. When done correctly, crown reduction can be like a good haircut — virtually unnoticeable.

Crown reduction as an objective uses cuts that reduce height and spread without resulting in stubs and creating the kind of problems associated with topping. Rather than the ends of branches simply being lopped off, or truncated, selected limbs forming the perimeter of the tree are pruned at their junction with side branches. In this way, the remaining limbs can take over as the new leaders. This prevents or reduces latent buds from sprouting into the bushy growth that results from lopping off branch ends.

With care, crown reduction can be achieved while at the same time retaining the species' natural form. At other times, this practice may be modified to allow utility lines to pass through while sparing the tree from removal.



CROWN REDUCTION

An example of crown reduction to control tree growth beneath utility lines.

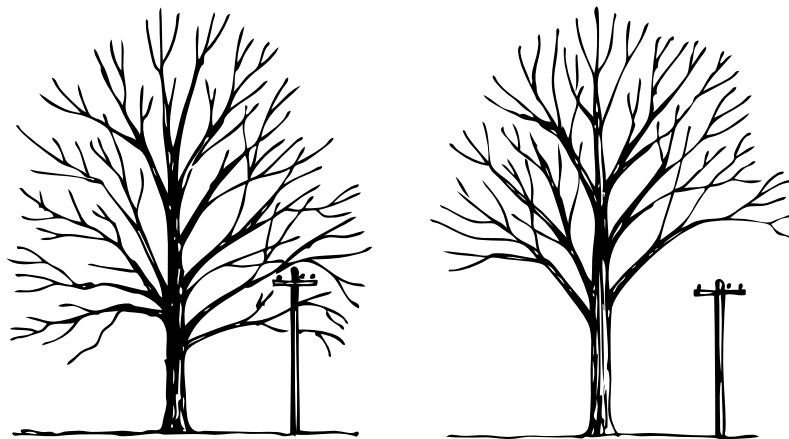
How an Urban Forestry Program Can Put an End to

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

WORKING WITH UTILITY COMPANIES

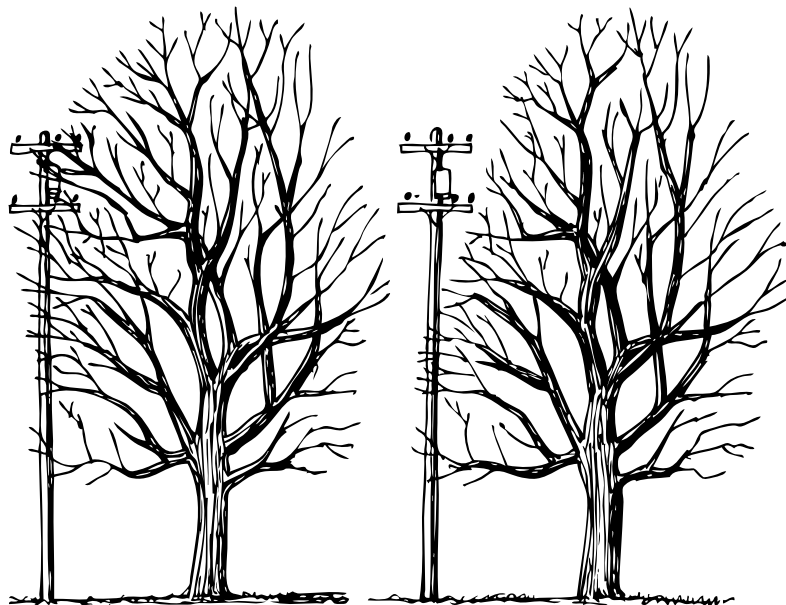
A major challenge of urban forestry is working with utility companies to help keep overhead wires safe from tree damage while at the same time ensuring that street trees are not mutilated by topping. Fortunately, this problem is diminishing as increasing numbers of companies assign tree trimming to ISA Certified 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 visiting utilityarborist.org.

In utility line maintenance, modifications of crown reduction pruning can be used as an alternative to topping or making a tree lopsided to keep it away from wires.



RAISING (UNDER PRUNING)

Under pruning is a technique that in some areas can be used on large, structurally sound trees. In this case, the lower branches are removed that may interfere with utility lines. To preserve the tree's symmetry, lower limbs on the opposite side of the tree might also be removed. Additional pruning to remove dead wood or weak limbs will help keep the tree healthy and less likely to drop limbs during a storm. However, depending on species, climate, and locale, branches overhanging utility lines may not be allowed, so side pruning would need to be used instead.



SIDE PRUNING

Side pruning is sometimes used when a tree is located next to transmission lines. Limbs are removed that extend toward a pole or the wires. As with raising, selective pruning on the opposite side of the tree can sometimes prevent or reduce a lopsided appearance.

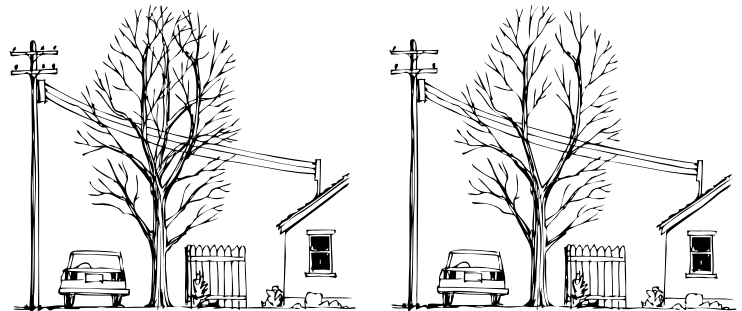
In all cases, the crown reduction technique of cutting at limb junctions will allow limbs to be removed without harmful, hedge-like truncations.



THROUGH PRUNING

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. Although not appropriate around high-voltage lines because of the dangers involved, this can be useful around secondary lines or those leading into individual houses or buildings. With care and the use of proper pruning 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. In some communities, utility companies offer free replacement. For more information about planting the right tree in the right place, see *Tree City USA Bulletin No. 4, The Right Tree for the Right Place*.



EDUCATION

To stop topping throughout the United States, education is needed in four ways:

- 1 Homeowners who do their own pruning need to understand the principles presented in this bulletin.
- 2 Property owners who hire an arborist must be aware enough of proper practices to insist that work on their trees be done without topping. Most responsible arborists will not include topping in their ads, and some even refuse to perform this practice if requested by the tree owner.
- 3 Citizens need to understand that topping or “rounding” trees is not in the best interests of tree health so that they do not request utility arborists or contractors to perform these practices.
- 4 Utilities and tree care companies must routinely train workers in the proper ways to prune shade trees.

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. You can learn more in *Tree City USA Bulletin No. 9: Writing a Municipal Tree Ordinance*.

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 3 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.

GROWTH AWARD

While working to eliminate topping, communities can also earn points necessary for the Tree City USA Growth Award. Suggested activities include:

- Forming a utility partnership.
- Improving maintenance by public utilities.
- Improving the city tree ordinance.
- Developing a special program to eliminate destructive practices.

The Pioneer of Anti-Topping


Tree topping inflicts harm on the helpless and has outward signs that alert and anger people of good conscience. While some who observe topping remain silent, others speak out or take action.



Perhaps the first to speak out against topping was John Davey. Davey was an Englishman who, as a boy, was apprenticed to learn the trades of horticulture and landscape gardening. When he immigrated to America in 1873, the only work he could find was that of school janitor. Eventually he became the groundskeeper at a cemetery in Kent, Ohio. By 1890, he already had a local reputation as “the tree man of the town.” He and his son planted street trees and did tree work for grateful residents.

Davey was a hard worker, but he was also a thinker and crusader. After a long day outdoors, he would spend his evenings writing pamphlets about proper tree care and finally a book, *The Tree Doctor*. No publisher was interested, but Davey believed enough in his cause to put up \$7,000 to have the book printed. That was in 1901. It was a good investment, because he and his son soon had so much work to do they could not keep up with it. To train others, they established The Davey Institute of Tree Surgery and, in 1909, The Davey Tree Expert Company. The rest, as they say, is history.

One reason why Davey’s book was so expensive to print was that there was a photo on almost every page. And on those pages, more than a century ago, Davey railed against tree topping, mincing no words. There were pictures of mutilated trees and captions such as, “The Work of Ignorant Tree Men” and “Their Beauty is Forever Gone.” Davey taught the principles of proper tree care as he understood them at the time. As for topping, he summed up his feelings with, “Nature does not form those beautiful and health-giving tops of shade trees to be cut to pieces to furnish ‘beer money’ for a lot of tree fools.”

 Tree topping is mutilation. The practice should be stopped.

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- Standard 1: A tree board or department
- Standard 2: A tree care ordinance
- Standard 3: A community forestry program with an annual budget of at least \$2 per capita
- Standard 4: An Arbor Day observance and proclamation

Each recognized 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, the Arbor Day Foundation at arborday.org/treecity, or your state forestry agency.

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FOR MORE INFORMATION ...

For more information about topping and what is being done to stop this malpractice, please visit arborday.org/bulletins.