



HOW TO PRUNE

*...AND CARE FOR
YOUR TREES*



Welcome to the most innovative pruning tool on the market

Thank you for your interest in the Power Pruner™. We are pleased to provide you with this handbook on pruning in order for you to create healthy trees and landscapes.

Echo, Incorporated is the largest manufacturer of extended-reach pruning equipment. Our goal is to assure all our customers' satisfaction. We listen to our customers and have made product changes over the years to meet your specific needs by providing products that increase performance, productivity and safety...at an affordable price.

The Power Pruner™ is a revolutionary product by anyone's standards. All models feature an extended reach that allows operators to stay on the ground while pruning high branches. The unique telescoping design helps remove the temptation of operating equipment in unsafe positions.

If you have any questions, call your Echo Power Pruner™ dealer.

Basic care for shade trees

While this booklet deals with tips about pruning, here are some suggestions for making sure your tree stays healthy for many decades. In most cases, the only occasional tasks to worry about are fertilizing, watering, mulching and of course, some pruning.



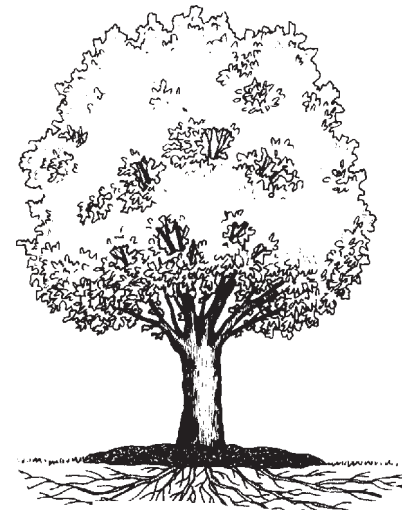
Fertilizing Shade Trees

Most home owners never fertilize mature shade trees in home landscapes. For the most part they do just fine. Fertilizing, however, is a definite benefit to any tree. You can easily fertilize the tree yourself or you can hire a professional arborist to do the job. Our recommendation is to fertilize shade trees every year for the first five or six years of life. After that, you will definitely help the tree if you feed it every couple of years. In any case you want to use a general purpose fertilizer containing a slow-release form of nitrogen. You can broadcast the fertilizer over the surface of the soil or you can inject the fertilizer under the soil if you have the proper tool.

How much fertilizer do you spread? Use about the same amount as you would for a lawn and cover the area under the tree's canopy and out half again beyond the canopy. The tree's feeder roots can sometimes go out twice the radius of the tree's limbs. Fall is the best time to fertilize shade trees, and once a year is sufficient.

Watering Shade Trees

As with feeding, most shade trees in the yard never get watered by the homeowner. We might water our vegetable garden regularly, but few of us think to water our mature shade trees. In most cases, that is okay. However, if you experience any kind of drought conditions where there is little or no rain for more than a few weeks, then trees will need some watering if you hope to keep them from getting too stressed. All shade trees under five years old should be treated just like vegetables or flowers and watered whenever the flowers need watering. Once a tree is more than five or six years old, then you water only when drought periods occur.



We recommend using a drip irrigation system or a porous hose irrigation system to water large trees properly. Spread the watering hose over the same area we suggested you use for spreading fertilizer; one and a half times the radius of the limbs, called the drip line. If you use an above-ground sprinkling device, water the tree slowly and deeply. Water should penetrate down at least a foot—preferably deeper. About an inch of water is desirable. Place a tuna fish can under the drop line of the sprinkler pattern to determine when an inch has been applied.

Mulching Shade Trees

Shade trees hate living in turf. Trees with grass underneath them, right up to the trunk, will always be in stress because the grass competes with the tree for nutrients. A shade tree in turf lives less than half its life expectancy. Shade trees are happy when they have some kind of mulch under their limbs, out as far from the trunk as you can tolerate aesthetically. A shade tree should be mulched 365 days a year. Mulch keeps down weeds, reduces water loss from evaporation, and keeps the soil warmer in the winter and cooler in the summer. Live mulches include all kinds of ground covers such as pachysandra, English ivy, or vinca. Organic mulches include wood chips in various forms or chopped leaves. Organic mulch should never be deeper than four inches, otherwise it blocks the access of oxygen from the air above the soil. Ideally, organic mulch will be two - to four - inches deep at all times.

Pruning Shade Trees

The rest of this booklet deals with pruning shade trees. This is not a demanding or time-consuming task. Trees need pruning only under certain circumstances, as described below. Generally, after a tree is five or six years old, you should not have to worry much about pruning except when a problem occurs. A good rule of thumb in keeping large shade trees healthy and happy is to have a professional arborist inspect your trees every four or five years. He or she will take care of any problems for a reasonable price, and you can expect to have your trees provide beauty and shade for many decades.



Take all precautionary measures when you're pruning: wear gloves, eye and ear protection, hard hat, and sturdy shoes. Learn how to use the equipment properly; and never work alone.

Safety tips before pruning

Most informational booklets discuss safety near the end. We believe it is so important that we want to cover safety right here in the beginning. Like many other yard-care tasks, when tree pruning is done with common sense and proper techniques little danger exists. On the other hand, thoughtless mistakes can lead to serious injury. Here are some key tips:

Wear proper clothes when pruning—long sleeves and long pants are important to protect exposed skin from scratches and skin irritants.

You should never prune anything with hand pruners without wearing gloves and eye protection. When using any power pruning equipment, standard clothing should always, without exception, include gloves, goggles, ear protection, sturdy shoes, hard hat and yes, even chaps. That is the uniform for all responsible professionals in the tree business. They wear those protections for very good reasons. They do not want to be injured.

Power equipment work should never be done alone; always have a helper. Take every precaution to learn how to use the power tool properly. Read the instruction even though you think you can figure it out on your own. Power tools used improperly are dangerous.

You should always avoid doing any pruning, especially with a power tool, when standing on a ladder. Always assume the branch you are pruning may fall on top of you. At least then, maybe you will be extra careful and take necessary precautions to avoid accidents.

Why prune?

Pruning involves cutting off part of a tree for the benefit of the entire plant. In this booklet we make a distinction between young trees and mature trees; each require a slightly different approach to pruning. In any case, prune for one of these three reasons:

To direct the growth of a tree

Here we are concerned primarily with young trees. Sometimes young saplings develop two main stems. Careful removal of one of these assures a strong, single trunk. Since trees grow by adding height at their tops, low branches stay at their original height and just grow larger in diameter. Remove any branches that are too low to the ground which prohibit people from walking by or that block light from reaching the ground under the tree.

Also, certain lateral branches may develop at such a narrow angle to the trunk that they are unsuitable to be the scaffold, or permanent branches for the canopy. Remove them while the tree is young. Scaffold branches should be 18 to 24 inches apart along the trunk of the tree and should grow from all the sides of the trunk.

To improve the health of the tree

Here we are looking at both young and mature trees. Remove all dead, diseased and insect-infected parts of any tree as soon as you spot them in order to prevent further infection. Cut out branches that rub against one another to eliminate the abrasions on the bark that promote insect or disease attacks. Also cut out branches that aim inward, rather than outward.

Selectively remove crowded branches to encourage better penetration of air and sunlight throughout the tree canopy. Better air circulation within the tree canopy helps wet leaves and bark dry more quickly after a rain, preventing conditions which may lead to decay or disease. When a tree is correctly pruned the grass, flowers gardens and shrubs beneath the tree will be healthier because of more light and more air circulation.

To manage the growth of the tree

Judicious pruning can actually manage some of a young tree's growth. Pruning during the summer months slows down the growth rate of a tree in the following year. Pruning done when the tree is dormant during the winter encourages a burst of new growth in the spring. Thinning the branches of a flowering tree prior to bloom reduces the number of blooms, but those that remain will be larger.

Which trees to prune

Some trees need very little pruning. Their natural habit is symmetrical and balanced; and they have little tendency to sprout unwanted shoots along their branches. These trees only need attention when they develop diseased or damaged limbs which need to be removed. Trees that need more attention are the fast growers, those that may be only marginally cold hardy in your area, and those that have weak wood or produce narrow crotches where the branches grow from the trunk. Also, trees planted in the wrong spot under utility lines, crowding walls, and hanging over roofs and gutters need frequent pruning. If a tree is too big for its location, judicious pruning can reduce the size without destroying its attractive, natural shape.

When to prune

Prune dead wood and diseased wood anytime. The best time to prune a tree for general training is wintertime. At least a month after all the leaves have fallen and the tree is dormant. It is easy to see and evaluate the branching silhouette of the tree when the foliage is gone. Pruning at this time is advantageous because the healing of the cuts will be most rapid in the spring into midsummer when plant tissues grow rapidly. Pruning in the late-winter stimulates tree growth. Flowering trees that bloom in the spring often carry their buds all winter. If necessary, lightly thin these trees during their winter dormancy and sacrifice a few of the blooms.

Midsummer is also a safe time to prune because rapid, new-season growth has slowed. It is a good time to shape a young tree.

Avoid pruning in the late-fall or early winter when leaves are falling. At these times trees have the lowest energy reserves available to undertake healing. Also, do not prune newly transplanted trees. This practice, once recommended by nurseries to reduce transplant stress, is no longer encouraged.

Basic pruning rules

Over-pruning can kill or damage a tree; so be certain to maintain at least two-thirds of the live tree when pruning. When cutting out dead wood, always cut back to healthy wood. When trimming a healthy branch, always cut back to another branch or bud where new growth is starting. A proper pruning cut is 1/8 to 3/8 inches above a bud and angled parallel to the direction the bud is pointing. When pruning part of an outside branch, always cut to an inside bud.

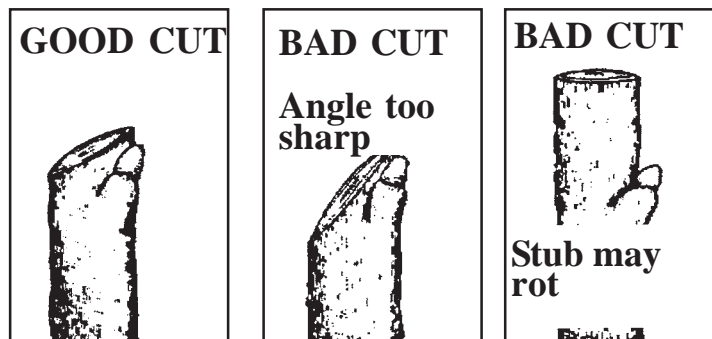


When cutting a limb from the main trunk, always avoid cutting the branch flush with the trunk. Instead, align the cut with the distinctive ridge of bark at the base of each branch that grows from the trunk. Sometimes called the “collar”, this bulge must remain after pruning a branch to ensure a healthy recovery from the injury.

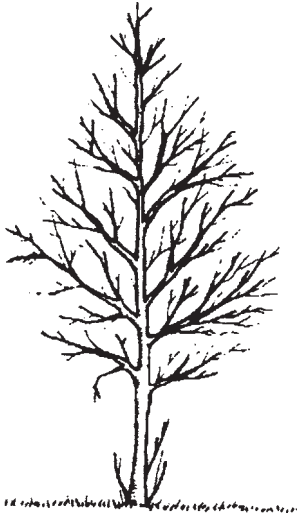
Avoid leaving any stubs, even when pruning a small shoot or twig. Stubs do not heal properly and will eventually dry and crack, providing an entry source for disease and insects. Never, never top a tree.

Pruning your trees

The best time to train trees by pruning is when they are young. Properly done, it will help you avoid major corrective pruning when the tree is older. In the first year after planting a tree prune lightly, allowing as much energy-producing foliage as possible to remain. In the second year you can begin to shape and manage the tree. Here are some things to look for:

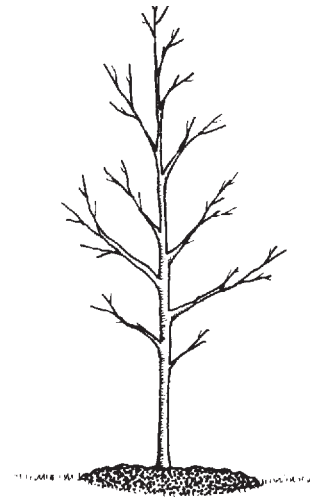


1. Remove all “water sprouts” (vertical fleshy shoots growing along horizontal limbs). Also remove all limbs and sprouts growing out of the face of the tree so that one strong main stem is left.



Young tree never pruned

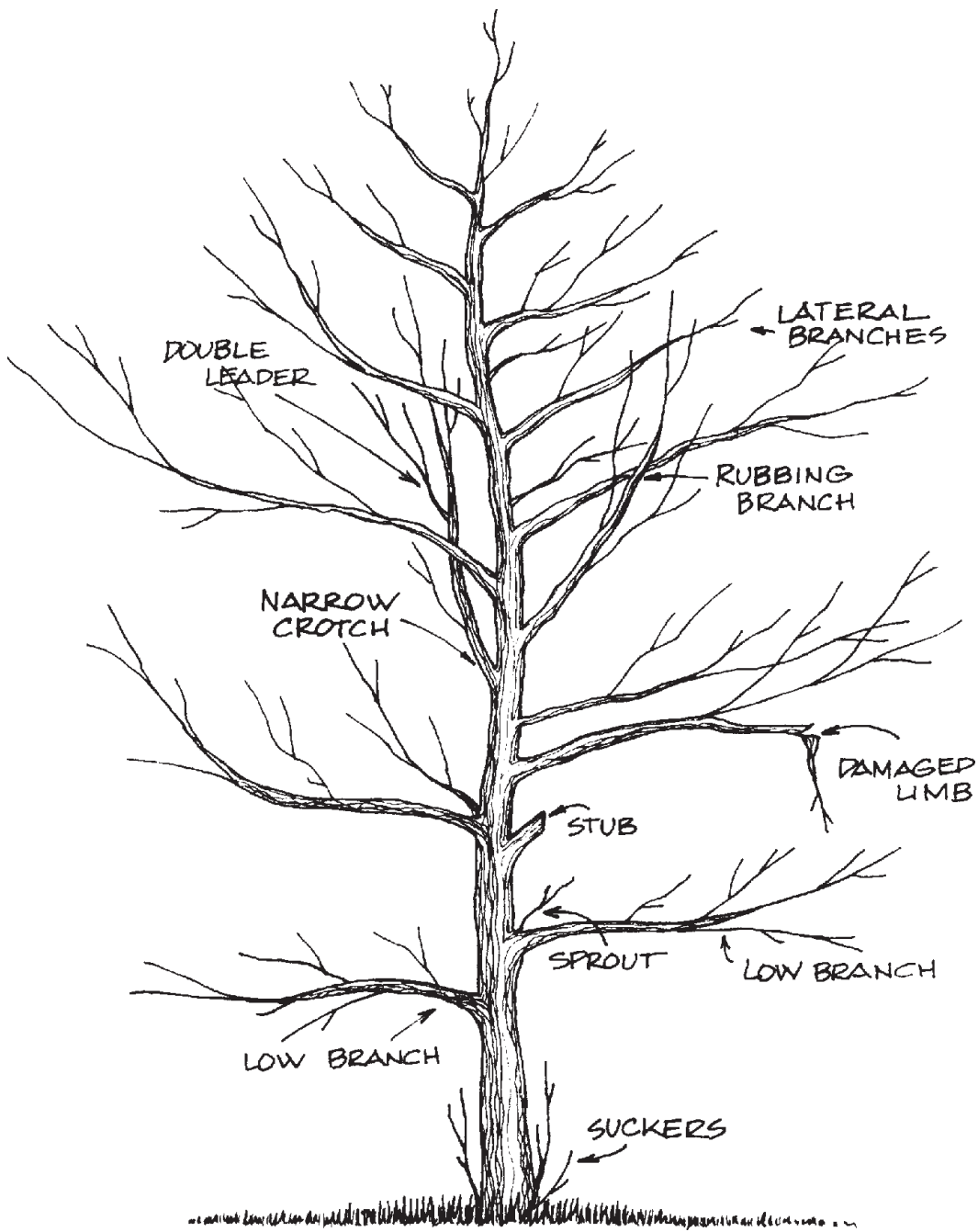
2. Remove those branches with very narrow crotches, growing at sharp angles to the main trunk. They are vulnerable to splitting off in storms in later years. Ideally, all branches should be at about 45-degree angle from the main trunk.
 3. Trim out all limbs that cross or touch another limb. Limbs that rub causes abrasions on tree bark on both branches and ultimately can lead to disease problems.
 4. Remove all branches that grow in toward the center of the tree.
5. Trim one of any two limbs growing too closely together. “Too close” will vary from species to species, but limbs closer than six inches to each other are suspect. As a general rule, evenly space lateral branches more than 12 inches apart to ensure that each branch receives the sunshine and moisture it needs.
 6. Cut off weak, downward-growing branches back at the main limb.
 7. Remember that a branch does not move upward as the tree grows taller. If a limb is headed toward a house or other structure, remove it early in the life of the tree or it will continue to grow (not up) as the tree matures.



Young tree properly pruned

Pruning mature trees

Mature shade trees that are looking unhealthy, or that are overloaded with many interior branches and limbs, may benefit from major surgery. Trim out most of the smallest interior branches to improve air circulation and light availability. To improve the health of the tree prune branches that are a detriment (see illustration on page 8).



Things to look for in pruning a mature tree

Bring in professional help

There are times that the solution to a problem with a mature tree is best handled by a professional arborist. When do you call for professional help?

1. When you don't have the expertise and proper equipment to tackle the job.
2. When the tree is too large and pruning requires extensive equipment like a bucket truck.
3. When the tree is located near utility lines, buildings or a highway you should consult a professional.
4. When major storm damage requires judgment on whether and how to save a tree.

Be very cautious about who you hire to care for your trees. Too many "tree experts" may come in and butcher a perfectly wonderful shade tree. Look for a company that uses certified arborists trained to properly care for trees. Always ask a tree care company to refer you to their satisfied customers. Take the time to visit them and look at the job that was done on their trees. Inquire about the equipment they use. For example, do they need a bucket truck to reach your high branches or do they use extended-reach pruning equipment? Do they use safety accessories and safe equipment, like insulated power equipment for use around high-voltage wires? Good pruning, like a good haircut, should not be obvious.



To protect your trees remove diseased and unhealthy tree branches using the proper equipment, like Power Pruner. To protect yourself adhere to safe techniques and wear protective clothing.

Tree treatment

Tree paint or wound dressing material has gone out of favor among modern arborists. Research shows that proper pruning does not promote decay and healthy trees are capable of healing themselves. If pruning is done improperly, no dressing will stop the decay. In fact, there is some evidence that it promotes the spread of decay within tree tissue by sealing in moisture. Do not paint, wrap or otherwise cover pruning wounds on trees.

You are your landscape's best friend

Taking care of your trees and landscape can be an enjoyable hobby. Use the proper tools, maintain safe guidelines, enjoy the fresh air and savor the effects of your effort...a healthy, beautiful environment.



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