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How To Prune Coniferous Evergreen Trees

D. W. McConnell
R. L. Mahoney
W. M. Colt
A. D. Partridge

University of Idaho
College of Agriculture
Cooperative Extension System

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Evergreen shade trees in the cities and towns of Idaho provide beauty and comfort. Unfortunately, these trees are often neglected or improperly treated and thus, they become sickly, unsightly, and hazardous. Proper maintenance of trees around homes and in parks can provide maximum benefits and minimal problems. Coniferous evergreens normally do not require pruning. At times, however, carefully planned pruning is a necessary part of a complete tree maintenance program.

Pruning Objectives

Pruning is the removal or reduction of certain parts of a plant that are not desired or required, no longer effective, or even injurious to the plant itself. The prime objective is to maintain the natural beauty of the plant and keep it as healthy as possible (Fig. 1). Pruning the crown of a young tree helps to bring the crown and roots into balance. A young tree can be trained into a desired shape or form, within certain limitations. In addition, trees should be maintained to protect homes, power lines, and neighboring plants. It is important, therefore, that the property owner make well-informed pruning decisions.

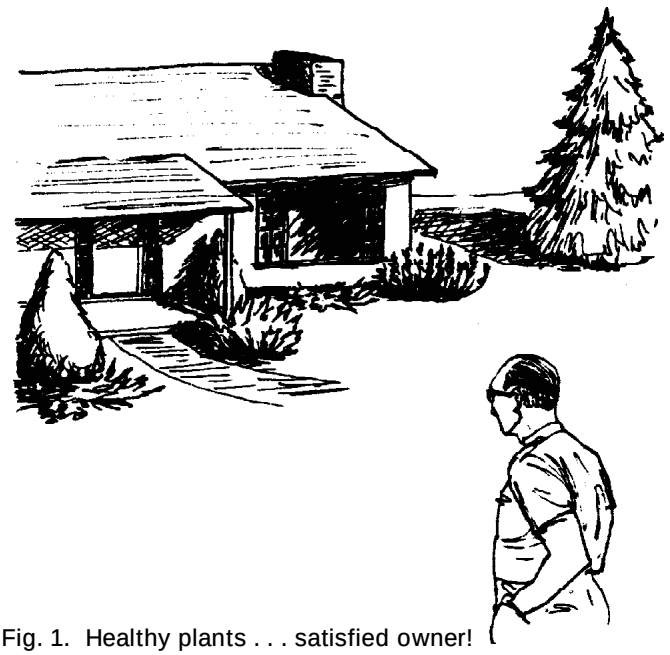

Fig. 1. Healthy plants . . . satisfied owner!

Severe, extensive pruning is costly both to the landowner and the tree. Such practices can be avoided through regular, judicious treatments where undesirable growth is periodically removed.

Do I Need to Hire A Professional Tree Surgeon?

The answer to this question will depend on several factors: the size and location of the tree, your physical ability and pruning knowledge, and your available time. In the case of any large tree, or a tree near a home or power lines, you should contact a professional tree surgeon. When locating a tree surgeon, remember these points:

1. Check the yellow pages for "Tree Service Companies." Avoid ads such as "Treework, call . . ." (Fig. 2).

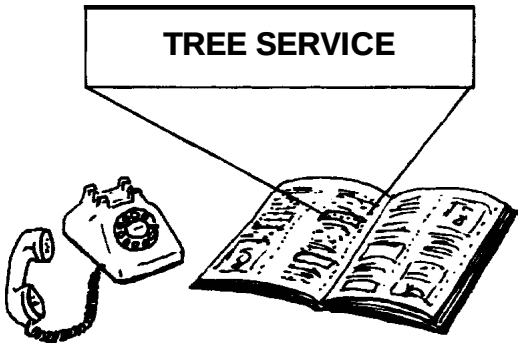

Fig. 2. Use the yellow pages to find reliable tree service companies.

2. The contractor must be bonded and insured. The work crew should have a copy of liability insurance in its possession while on the job.
3. Ask for references of past work in the community. If possible, take time to visit one or two of these sites.
4. Require that the job be performed on a "job basis," not an hourly rate. Use a written contract.
5. Ask for a full explanation of what the tree service contractor thinks your tree needs, why it needs this treatment, and what he intends to do to the tree. If you have uncertainties, get a second opinion.

6. Don't be forced into a quick decision by high pressure or the offer of a "real deal." Get a second or third estimate of necessary treatments and costs.

Whether you decide to prune your trees yourself or hire a professional tree surgeon, read this publication, and study the illustrations carefully. This information will also be useful when discussing the requirements of your situation with a tree service contractor. If you have any questions, contact the University of Idaho Cooperative Extension System office in your county for advice.

When to Prune

One of the first occasions when a tree may require pruning is when planted. Roots have been disturbed or partly destroyed, and the branch structure should be brought into balance with the remaining root system. A young tree, if well pruned and trained in its early life, will need minimal pruning in later years. The removal of young, small limbs is quick and simple (Fig. 3). If pruning is delayed until limbs become large, they are more difficult to remove and will alter the appearance and health of the tree. The best results come from pruning a young, vigorous tree.

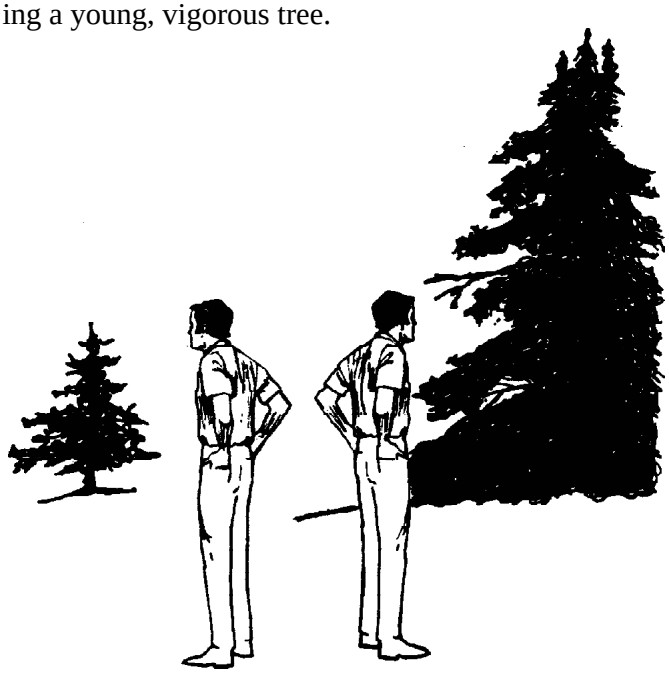

Fig. 3. When to prune?

Most conifers have strong, central leaders and will need little or no training unless nontypical growth is desired. Pruning when planting involves thinning out some of the branches that would become crowded or develop weak crotches and removing branches that cross each other. Multiple leaders should be thinned to favor the strongest or best-formed individual.

For established trees, annual inspections will show whether pruning or other tree maintenance is necessary. Again, most coniferous evergreens need little or no pruning given the proper situation. Broken or crowded limbs needing treatment will be infrequent if the tree has been properly maintained. The size of older trees of some species can be controlled to a limited extent with careful pruning.

For coniferous species such as Grand fir, Western white pine, and the spruces, late winter to early spring is the preferred time to prune. Do not prune live branches during the growing season—late spring through summer. At this time, the bark is more easily damaged, creating a high risk for fungal infection. Douglas-fir bark is easily damaged and may not produce enough resin to protect a wound from fungal infection. With Douglas-fir, it is unsafe to prune branches larger than $1\frac{1}{2}$ to 2 inches in diameter due to this problem. Pruning spruce, however, stimulates resin production that helps protect cut surfaces from fungal infections.

With care, dead limbs may be removed at any time from coniferous trees. Dead limbs may be identified by their lack of green foliage or live tissue under the bark. Use a knife to scrape away the outer bark of the suspect branch. If the exposed tissue is dry, the branch is dead.

Tools for Pruning

Hand saws that cut on the pull stroke are recommended for pruning as they provide excellent control while being the easiest to use. Pole saws are useful for pruning branches that are less than 20 feet above the ground. Sharp and well-maintained bypass hand shears are also recommended for the removal of small, light branches. Figure 4 illustrates the preferred tools for pruning.

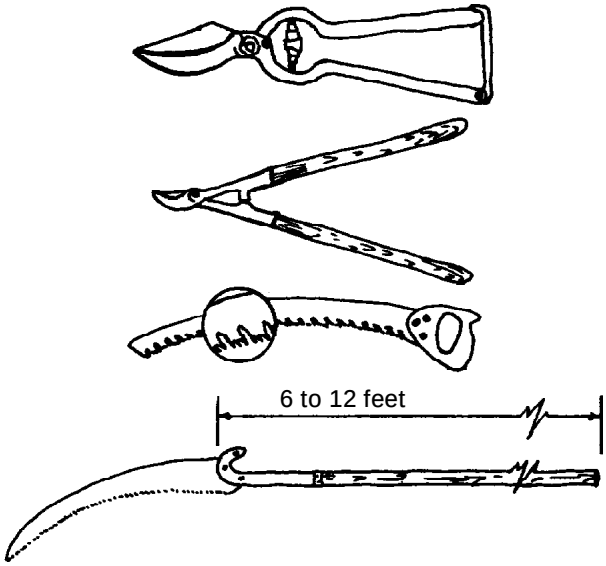

Fig. 4. Recommended pruning tools.

Hedge shears should not be used as they do not remove branches cleanly. Likewise, anvil-cut hand shears tend to crush the pruned stem, which slows the healing process. Chainsaws are only recommended for preliminary or rough cuts in pruning. Most pruning should be done before branches ever reach a size that requires the use of a chainsaw.

The use of axes for pruning should be avoided. The rough stubs left by this treatment heal poorly; there is also a higher risk of needlessly injuring a valuable shade tree or yourself.

Guidelines for Pruning Conifers

Before pruning, consider your objectives, such as the desired size, shape, and density of the tree. At times, no amount of careful pruning will control the plant to your satisfaction. In such a case, removal and replacement with a different plant may be the best treatment.

The dense growth characteristics of juniper, arborvitae, and similar species produce a dead interior zone where the twigs and buds are killed from severe self-shading (Fig. 5). The dead zone limits the extent of pruning. If it is exposed by severe pruning, new shoots will not develop from the exposed area. The result is a deformed and unsightly plant.

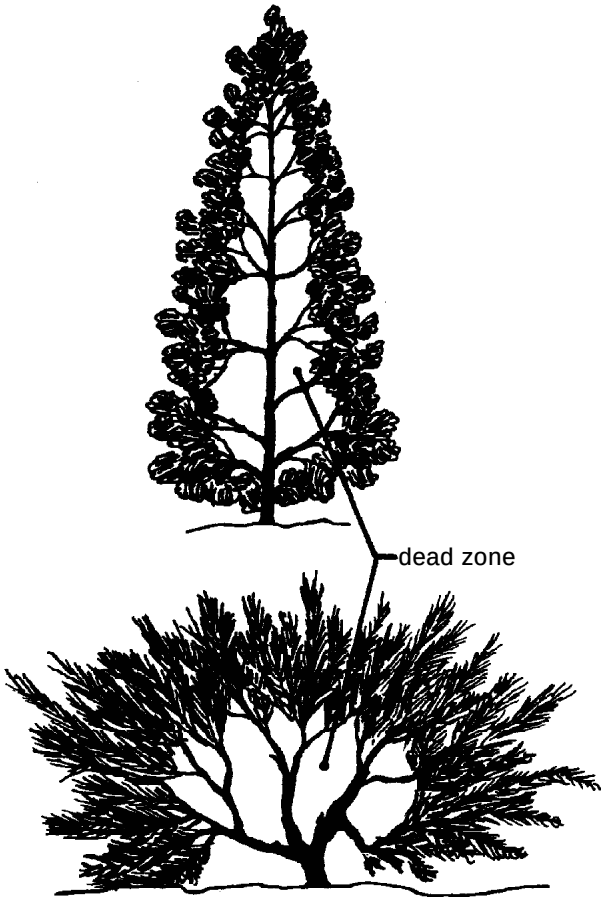

Fig. 5. Dead zone of juniper and arborvitae.

After locating the dead zone, look in the live zone for limbs that can be completely removed or for limbs that are dead, diseased, or broken. If a branch is to be partially removed, make sure to leave a green shoot near the cut or else the limb will die. The green shoot will produce vigorous growth during the following growing season.

The growth habits of pines differ from the other evergreen species mentioned above. Pines do not develop a prominent dead zone because their open crown does not cause severe self-shading. Some lower and inner branches, however, will periodically die from self-shading and normal growth habits. Pines characteristically produce branches in groups, or whorls, an important fact to consider in proper pruning. See figure 6 for examples of these and other tree parts.

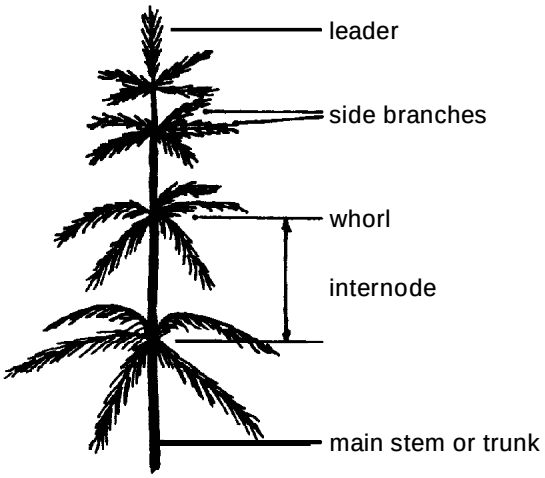

Fig. 6. Important parts of a coniferous evergreen to know when pruning.

Again, before pruning, consider your objectives for the tree, especially concerning the size and shape. Small pines are often pruned to produce a pyramidal, Christmas tree form. Pruning will shorten the space between the whorls of a pine, producing a fuller, more compact plant.

Begin by cutting back the central leader at the top to an 8- to 12-inch stub (Fig. 7A). This cut should be just above a well-formed bud. If possible, select a bud on the north side of the branch in order to form the straightest growth. South-facing buds tend to grow outward rather than upward.

Next, prune the side branches around the top until they are 4 to 6 inches shorter than the central leader. Continue pruning the remaining side branches in a manner that will produce a uniform pyramid shape (Fig. 7B).

If the leader of a tree has been broken, a side branch can be trained to become the new leader. This process would occur naturally but usually results in two or more

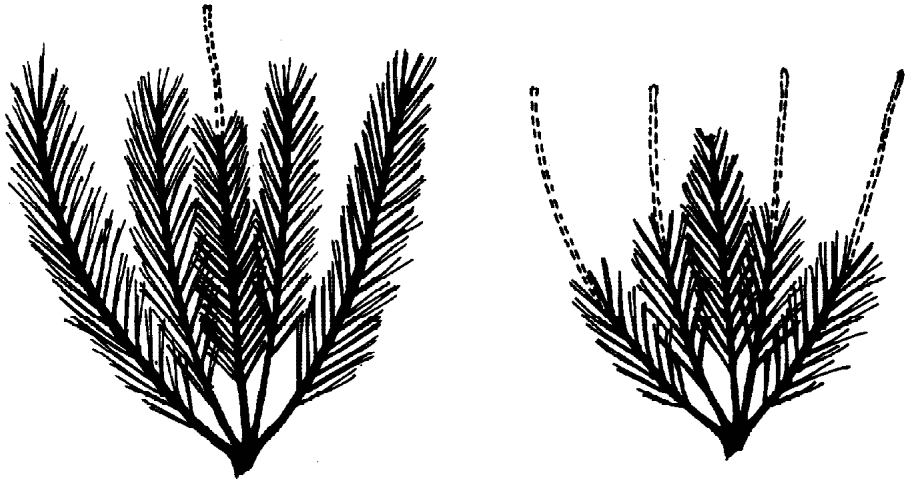

Fig. 7. Two steps to pruning the leader of a pine tree.

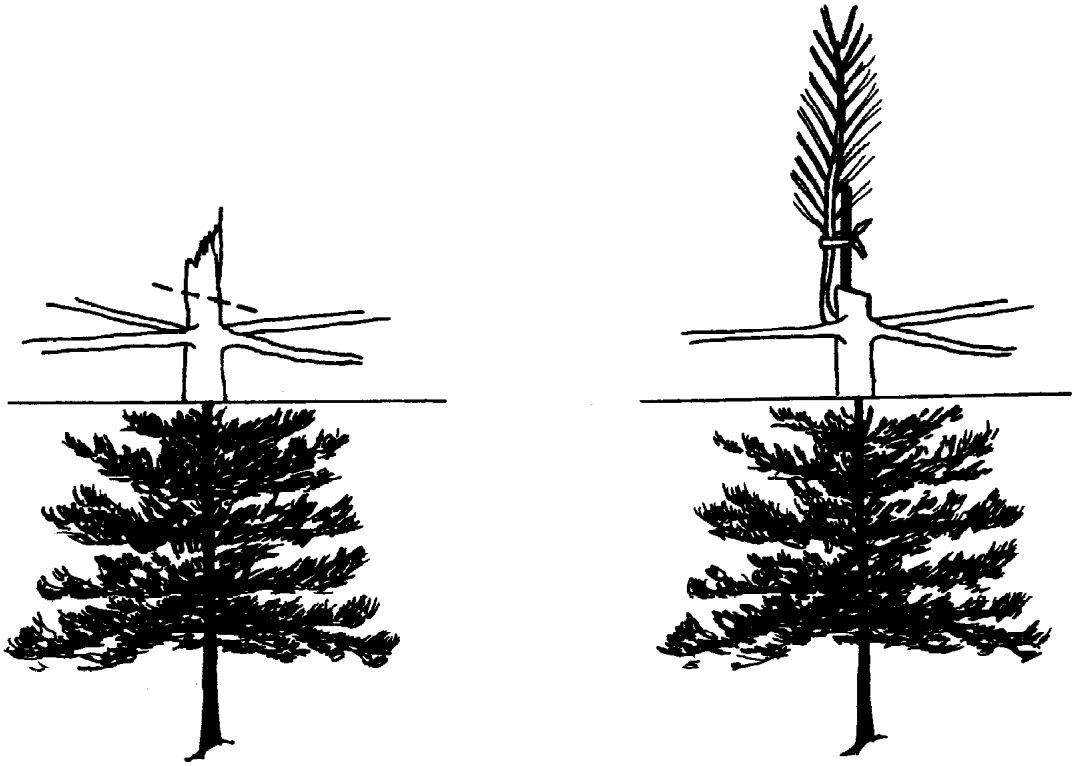

Fig. 8. How to train a branch to replace a broken leader on a coniferous evergreen.

branches competing with one another as multiple leaders. To prevent this, cut back the remnant of the main stem to a point just above the uppermost whorl of branches (Fig. 8A).

Prune one of the branches to a length of 6 to 10 inches. Gently bend the limb to an upright position and hold it in place with a stake and string (Fig. 8B). Finally, prune the other branches in the whorl back to restore the pyramidal shape of the tree.

Pruning pines will stimulate bud development from the needle bunches below each cut. These buds will increase the density of the tree by producing more limbs. The branches of larger pine trees will respond in a similar fashion. Be sure to prune only the newer growth, leaving green needles on the cut branches to produce more buds.

When pruning larger evergreen trees, it is often desirable to remove lower branches in order to improve access around the tree. As much as one-third of the crown of full-crowned evergreens may be removed without affecting the vigor of the tree (Fig. 9). The lower crown, however, should only be removed when absolutely necessary. The fully crowned tree in figure 9 is obviously superior in beauty and utility.

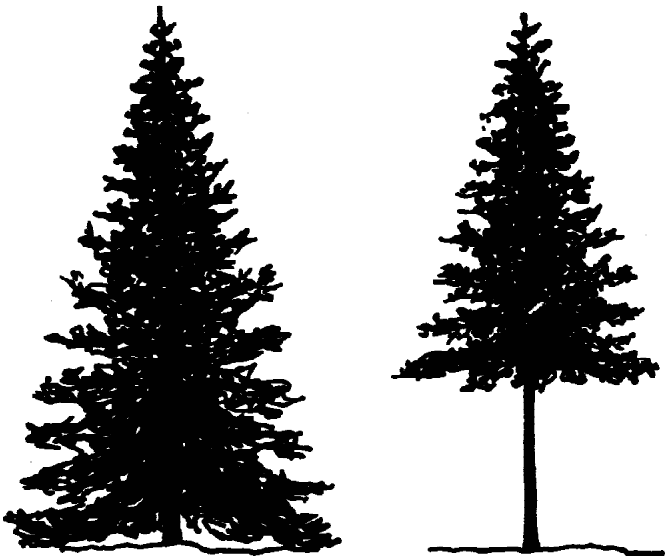

Fig. 9. Before and after: the removal of lower branches from a coniferous evergreen will improve access around the tree without affecting its vigor.

When removing a heavy limb, follow a three-cut process as follows. Make the first cut 1 to 2 feet away from the base of the limb on the underside of the branch; this cut should be made through approximately one-third of the branch. Make the second cut from above, just outside the first cut; it should completely sever the branch. Finally, make the third cut just outside the limb collar, parallel to the attached limb or to the tree trunk if attached there. Figure 10 shows these three basic steps in pruning.

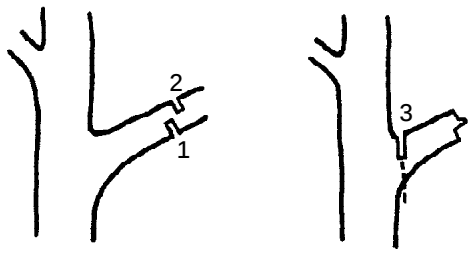

Fig. 10. Use three cuts when removing a large branch.

When making this third cut, support the stub. This process will permit the basal cut to be made smoothly, without the risk of binding a saw or peeling the bark.

In larger evergreen trees, remove any dead or broken branches and any branch stubs. Be sure to make the cut surfaces as flush with the bark as possible. For branches that noticeably swell where they join the main stem, make the final cut at the point where the branch begins to flare. This leaves a smaller cut surface that will heal more rapidly (Fig. 10, cut 3). Also, any branches that appear crowded should be thinned to favor a single, stronger branch. Strong branches can be identified by the wide branching angle between the trunk and the limb.

Do Not Top Evergreens!

An unsatisfactory approach to tree maintenance for any tree is to top it. Topping is the removal of all branches of a mature tree above an arbitrary height, leaving unnatural, grotesque stubs.

Large evergreen trees do not respond well to topping. The removal of the upper main stem through topping opens the tree to internal decay, disease, or damaging insects; it also removes the most productive portion of the crown of the tree. The result is that the tree becomes a hazard to itself, neighboring trees, and your property (Fig. 11).

Fig. 11. A topped tree becomes both grotesque and hazardous.

The practice of topping to control tree size or growth is not justified. If the tree is too large to fit the space, it should be removed and replaced with a smaller species. Be aware that unprofessional tree service crews use this approach because it takes little skill and is easiest for them to perform. Do not let yourself be persuaded that topping serves your best interest; both you and your tree will suffer from such mistreatment.

Pruning Mature Evergreens Near Powerlines

> We strongly recommend that you hire a professional tree maintenance service when pruning near overhead powerlines. Always notify the power company before beginning work.

Pruning around powerlines is necessary to prevent line damage and other hazards. It should be done, however, in an aesthetically pleasing manner that is also good for the tree.

Directional pruning involves the opening of paths through the crown of the tree for the wires. While this method may appear more expensive than others, it gives

the most lasting benefits with the least disfigurement of the tree. Thus, it costs less in the long run, and valuable large trees can be retained (Fig. 12).

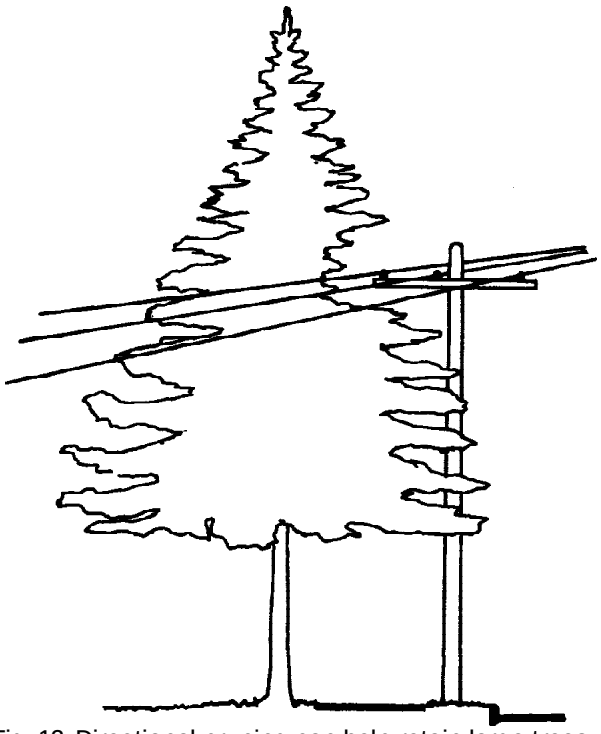

Fig. 12. Directional pruning can help retain large trees near powerlines, but this kind of pruning should be performed by a professional tree service.

Pruning Diseased Evergreens

At times it is necessary to prune a tree to remove or prevent the further spread of a disease. Under such conditions, great care should be exercised so that the pruning will not promote the spread of the disease. Dead or infected branches harbor pathogens that are easily carried by cutting tools. Saws and other tools used in this work should be dipped in alcohol or household bleach between each cut in order to kill any pathogen which might be carried on the tool. Lightly oil all pruning tools after use.

Sanitation pruning cuts should be done well away from infected wood. Be sure to make your cut in live wood at least 4 to 6 inches below the last indication of dieback or disease. Branches and debris from such pruning should be burned as soon as possible and as close to the site as convenient to minimize the danger of spreading the disease.

Avoid pruning diseased trees in wet weather. Both the plants and the air should be dry for several days before pruning and until the pruned debris is burned. An extended period of dry weather during late summer is an example of a good time to prune diseased branches. The risk of spreading disease spores through tools or the careless handling of infected material is greatly decreased during dry weather.

Wound Care for Evergreens

Open wounds can expose trees to unnecessary damage from insects and disease. With simple treatment, wounds can be encouraged to heal rapidly and so protect valuable trees.

To promote rapid healing, trim the bark around the wound into an elliptical shape, creating a clean wound edge. It is best to use a sharp knife that has been sterilized with methyl alcohol or a household bleach. The elliptical shape around the wound prevents water from pooling in the wound and improves the sap flow that heals the wound (Fig. 13). Wounds should be allowed to dry as quickly as possible to avoid the entrance of insects or disease.

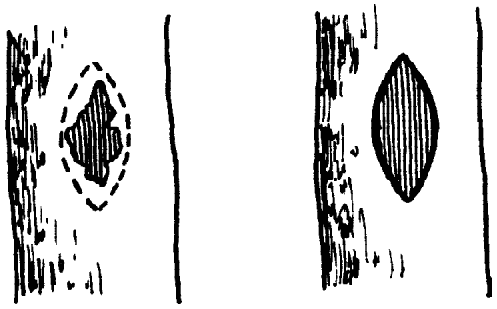

Fig. 13. A clean-edged, elliptical cut promotes healing of tree wounds.

Tree dressings and pruning paints do not increase the healing rate of a properly cut surface. Asphalt tree dressings are cosmetic treatments often used on large basal cuts to make the tree “look better.” Any paint used to cover a wet wound or one from which sap is seeping may entrap disease or decay-causing fungi so that healing is hampered rather than promoted. House paints used on wounds will often kill living tissue, thus enlarging the wound. While most home gardeners believe that tree dressings aid healing and prevent infection, no evidence supports this theory. Dressing a completely dry wound after the first growing season would cause no harm to the tree and it probably would have no benefit. We recommend, therefore, that you do not use any type of tree wound dressing.

Common Coniferous Evergreen Trees Found in Idaho

The following list of trees represents the most common coniferous evergreens found in cities and towns in Idaho:

Douglas-fir, Grand fir, White fir, Eastern red cedar, Western red cedar, Northern white cedar, Ponderosa pine, Scots pine, Austrian pine, Western white pine, Rocky Mountain juniper, Alberta spruce, Norway spruce, Colorado blue spruce, and Englemann spruce.

Acknowledgment

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About the Authors

Douglass McConnell is a former Extension forestry assistant, Ronald Mahoney is Extension forester, and Arthur D. Partridge is a former professor of forest resources, all at the UI College of Forest, Wildlife and Range Sciences in Moscow. W. Michael Colt is Extension horticulturist at the UI Parma Research and Extension Center.

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